UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

DEC 2 1 2018

REPLY TO THE ATTENTION OF:

WC-15J

CERTIFIED MAIL 7016 3010 0000 9203 4639
RETURN RECEIPT REQUESTED

Ex. 6 (Personal Privacy)
FOIA Ex. 6 (Personal Farms, LLC
Ex. 6 (Personal Privacy)

Subject: EPA Inspection Report

Dear Ex. 6 (Personal Privacy):

Enclosed, please find a copy of the U.S. Environmental Protection Agency Inspection Report for the inspection conducted by the EPA at FOIA Ex. 6 (Personal Farms, LLC on November 6, 2018. The purpose of the EPA inspection was to evaluate FOIA Ex. 6 (Personal Farms' compliance with the Clean Water Act.

Should you find anything in the report that you disagree with, please provide a detailed response.

If you have any questions, please contact Joan Rogers of my staff at (312) 886-2785.

Sincerely,

Ryan J. Bahr, Chief, Section 2
Water Enforcement and Compliance Assurance Branch

Enclosures

cc: Mary Ann Lowndes, WDNR
Erin Carviou, WDNR

CWA COMPLIANCE EVALUATION INSPECTION REPORT
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 5

Purpose:
Compliance Evaluation Sampling Inspection

Facility:
FOIA Ex. 6 (Personal Farms, LLC
FOIA Ex. 6 (Personal Priacy)
Kewaunee, WI 54216
FOIA Ex. 6 (Personal Priacy) W

NPDES Permit Number:
None

Date of Inspection:
November 6, 2018

EPA Representatives:
Joan Rogers, Environmental Scientist, 312-886-2785
Cheryl Burdett, EPA CAFO Program Manager, 312-886-1463

State Representatives:
Erin Carviou, 920-662-5419

Facility Representatives:
Ex. 6 (Personal Privacy)
Ex. 6 (Personal Privacy)
Ex. 6 (Personal Privacy)

Inspector Signature: Joan A Rogers

Approver Signature: Cheryl Burdett

Approval Date: 12/21/18

1. BACKGROUND

The purpose of this report is to describe, evaluate and document the FOIA Ex. 6 (Personal Farms's compliance with the Clean Water Act (CWA) at its Kewaunee, Wisconsin facility on November 6, 2018. This inspection was performed pursuant to Section 308(a) of the Federal Water Pollution Control Act, as amended.

FOIA Ex. 6 (Personal Farms is a dairy operation. At the time of the inspection, FOIA Ex. 6 (Personal Farms confined 436 mature dairy cows, which meets the type and number of animals of a medium dairy concentrated animal feeding operation (CAFO). The farm also has calves, heifers, steer, swine, and a couple horses.

Runoff from the facility flows to the north toward an intermittent unnamed tributary approximately 300' to the north of the production area. The tributary flows east for approximately 1.8 miles until it becomes a perennial unnamed stream. It then flows 0.10 miles to Lake Michigan. Lake Michigan is a Traditional Navigable Waterway throughout.

In May 2017, personnel from Kewaunee County Land and Water Conservation Department (Kewaunee County LWCD) performed a walk-through of the facility and noted several deficiencies. On June 14, 2017, Kewaunee County LWCD issued a Letter of Non-Compliance to the facility and required immediate action to eliminate runoff from the feedlot and stored manure. They gave the facility until December 31, 2018 to eliminate tillage setback and gully erosion problems. The facility applied for and received Environmental Quality Incentives Program (EQIP) funding for development of a Nutrient Management Plan (NMP).

2. SITE INSPECTION

Table 1: Site Entry and Opening Conference

Arrival Time:	9:00 A.M
Temperature:	45F
Precipitation:	Light Rain during the inspection, approximately ¾" during the night before.
Presented credentials?	Yes
Credentials presented to whom and at what time?	To the owners at 9:00 A.M.
Was an opening conference held? With whom?	Yes, with the owners.
If photographs or documents were taken, does the facility consider any to be Confidential Business Information (CBI)?	No
Which information does the facility consider to be CBI?	None
EPA vehicle parked in approved location?	Yes
Location where EPA vehicle was parked?	By the Equipment Barn

Disposable boots worn?	Yes
Other bio-security measures taken (state vet contacted, etc.):	None

2.1 Records Review (The following Records Review tables reflect information provided before the walk-through of the facility, unless otherwise noted.)

Table 2: Documents

Checklist(s) Used
R5 CAFO Inspection Report as Checklist
Facility Documents Reviewed:
Animal numbers page produced from Dairy Comp program

Table 3: Facility Description

Type of Animal	**Number of Animals**	**Type of Confinement**
Mature Dairy	436	Freestall barns
Swine	25-30	Pens in barn
Calves, Heifers, Steers	408	Barns and open pens
Minimum Number of Animals in previous 5 years:		Same as above
Maximum Number of Animals in previous 5 years:		Same as above
Number of Animals that are stabled/confined and/or fed/maintained for 45 days or more in previous 12 months:		Same as above
Amount of Liquid Manure Generated per year:		Unknown
Amount of Solid Manure Generated per year:		Unknown
Does the facility have an NPDES Permit?		No
SIC or NAICS code:		0241
Do animals have direct access to WOUS?		Yes, from the feedlot
Are crops, vegetation, forage growth, or post harvest residues sustained in the normal growing season over any portion of the lot or facility where animals are kept?		No
Other facilities under common ownership (name and address): None		

Table 4: Livestock Waste Storage

Type of Storage	**Storage Capacity**	**Type of Liner**	**Depth Markers Present**	**Last Time Waste was Removed**	**Amount of Waste Removed**	**Days of Storage**
Manure Pond	5.5 million gallons	Clay	No	1st week of September	Unknown	Approximately one year

Solids stacking bunker by Open Front Heifer Barn	Unknown	Concrete	NA	Daily	Unknown	Unknown
Solids stacking bunker west of Calf Barn	Unknown	Concrete	NA	Daily	Unknown	Unknown
Records at site of storage structure design?				Manure Pond was designed by county personnel and built in 2005. No records on site.		
Is manure stored for the short term? If yes, describe where it is stored, how it is drained and where it drains to.				Yes, in the solids stacking bunkers and in the solids separation barn. From the bunkers, the manure and used bedding is hauled to fields every 2-3 days. Leachate from the solids stacking bunker by the Open Front Heifer Barn is able to flow out of the bunker and to the east and then north. Leachate from the solids stacking bunker west of the Calf Barn is hauled with the solids. Leachate from the manure stored in the solids separation barn flows via gravity to the manure pond. This manure is then reused as bedding.		
Are records kept of the level of manure in the storage structures?				No		
When was the last time a storage structure was emptied, either partially or completely?				The solids are land applied almost daily. The manure pond was partially emptied during the first week of September.		
Do the facility personnel inspect and keep records of all diversion devices?				Observed during regular activities. No records kept.		
Do the facility personnel inspect and keep records of all impoundments?				Observed during regular activities. No records kept.		
Do the facility personnel inspect and keep records of all the water lines?				Observed during regular activities. No records kept.		
Do the facility personnel perform routine visual inspections and keep records of the production area?				Observed during regular activities. No records kept.		
Does the waste storage system have a managed outfall or discharge point?				No		

Has the facility had any documented discharges of livestock waste to surface water in the past year?	No
Are there safety devices installed around any manure storage ponds?	Yes – electrified fencing.

Table 5: Livestock Waste Management

Describe the way manure is collected and disposed of at the facility:	
Open Front Heifer Barn: Scraped 2x/week and hauled for land application. Parlor Barn: Scraped 2x/day to solid separator. Solids are reused as bedding. Liquid flows to manure pond. Barn #2: Same as Parlor Barn. Calf Barn: It is a solid pack and solids are scraped and stacked in concrete bunker. Hauled and land applied as necessary. Swine Barn: Scraped 2x/week and hauled for land application. Heifer Barn: Scraped daily and hauled for land application.	
Describe the way used bedding is collected and disposed of at the facility:	
All bedding in all barns and pens except for the Parlor Barn and Barn #2 are scraped with manure as listed above and hauled for land application. Parlor Barn and Barn #2 use recycled manure solids for bedding and it is scraped with the manure to the solid separator whereby the solids are reused and the liquid flows to the manure pond. Open Front Heifer Barn uses corn stalks for bedding. Calf Barn uses straw for bedding. All other barns use recycled solids for bedding.	
Are mortality records kept?	Yes
Describe the way mortalities are managed at the facility:	
Sandy Bay Mink Farm picks up the mortalities which are stored for the short term by the loading ramp outside the Parlor Barn.	
What type of method is used to provide drinking water for the animals?	Float drinkers
Describe the way spilled drinking water is collected and disposed of at the facility:	
It is handled with the manure.	
Describe the way mist cooling water is collected and disposed of at the facility:	
No mist cooling system is used.	
Describe how chemicals are stored and how used or spilled chemicals are collected and disposed of at the facility:	
Footbath is kept in the equipment room by the Milking Parlor. Teat dip is stored in totes in the Milking Parlor.	
Describe the way water that has been used to wash/flush barns is collected and disposed of at the facility:	
Barns are not washed or flushed.	
Describe where water comes from that is used to clean and/or flush.	
Plate cooler water is reused for Milking Parlor wash water.	

Describe the way feed is contained and how runoff from feed is collected and disposed of at the facility:
Feed is kept in silage bags and one silo. There is no managed collection point for feed runoff.
If a dairy, describe how process wastewater from the plate cooler water is collected and disposed of at the facility:
It is reused for Milking Parlor wash water.
If a dairy, describe how process wastewater from the cleaning of the milking parlor is collected and disposed of at the facility:
Milking Parlor wash water flows into the gutter system in the Milking Parlor Barn and flows with manure to the Manure Pond. Milkhouse waste is piped to a tank west of the Calf Barn and is land applied with the scraped solids from the barns.
If a dairy, describe how process wastewater from the cleaning of the milk tanks is disposed of at the facility:
It is managed with the manure and flows eventually to the Manure Pond.

If a dairy, how many times per day are cows milked?	Depends on the animal. Some are milked 2x/day and some are milked 4x/day.

Table 6: Land Application and Disposal of Manure and Process Wastewater

Does the facility perform and keep records of the manure testing?	Facility performs manure testing and the analysis is turned into the county.
When was the last time a sample was taken of the manure and/or process wastewater?	1st week of September.
Describe the process to take the manure and/or process wastewater sample.	Manure haulers take the samples.
Number of acres available for land application:	1100 acres
Are land application records kept?	Yes
Who applies the manure and process wastewater to the fields?	Right Way Application
Are weather conditions at time of application kept? (24 before – 24 after)	Not by the facility.
Does the facility perform and keep records of the soil testing?	Yes and samples are taken every 5 years.
Is manure transferred off-site to another party?	No
Are manure transfer records maintained?	NA
Do facility personnel perform periodic inspection of land application equipment?	NA

Table 7: Receiving Surface Waters

Describe the surface flow pathways:	
Flow is to the north toward an intermittent unnamed tributary approximately 300' to the north of the production area. The tributary flows east for approximately 1.8 miles until it becomes a perennial unnamed stream. It then flows 0.10 miles to Lake Michigan.	
How many months out of the year is there flow in the nearest surface water pathway:	In 2018, there was flow in the tributary all 12 months. Typically, there is flow in the tributary 10-11 months out of the year.
Are there any storm water pathways entering the facility?	No
Are there any clean water ponds on site?	No
What is the name of the first waterway that is identified as a Traditional Navigable Water (TNW) for surface flow from the facility?	Lake Michigan is a TNW throughout.
Is the surface water pathway nearest to the facility considered to be ephemeral, intermittent or perennial?	Intermittent
Has the surface water pathway nearest to the facility been assessed for water quality?	No

Table 8: Nutrient Management Plan

NMP on site?	No
Date NMP Submitted:	Not complete yet
Planner Name/Company:	Country Vision Cooperative
Additional NMP comments:	The owner began working with Country Vision Cooperative in July 2018 to develop the NMP. It is not completed. Owner received EQIP funding for development of the NMP.

Table 9: Land Application Records – No land application records were reviewed.

Table 10: Facility Records – Other than a printed copy of the animal numbers at the facility, no facility records were reviewed.

Table 11: NPDES Permit – The facility does not have an NPDES permit.

2.2 Walkthrough of the Facility

See Attachment A – Photo Log for a description of the walkthrough of the facility.

2.3 Closing Conference and Post-Inspection

Table 12: Post Walk-Through

Was a closing conference held? With whom? Yes, with the owner.	
Were specific Areas of Concern discussed with facility personnel?	Yes
Who were the Areas of Concern discussed with? With the owner.	
Were any deficiencies or areas of concern addressed or fixed during the inspection? If so, list what was done. No deficiencies or areas of concern were addressed or fixed during the inspection.	
Compliance assistance materials given to facility personnel:	
US EPA Beneficial Uses of Manure and Environmental Protection Fact Sheet – Dated August 2015	
USDA/NRCS Environmental Quality Incentives Program (EQIP) Fact Sheet – Dated October 2003	
US EPA Small Business Resources Information Sheet – Dated June 2017	
US EPA Concentrated Animal Feeding Operations Final Rulemaking Fact Sheet – Dated October 2008	
USDA/NRCS Most Common Conservation Practices for Confined Livestock Fact Sheet – Dated February 2009	
WDNR Wisconsin's Runoff Rules Fact Sheet – Dated January 2013	
WDNR Don't Burn Agricultural Plastics Fact Sheet – PUB # WA1592	
WDNR Burning Garbage: A Problem for Our Communities Fact Sheet – PUB WA-1373 2010	
Exit Time:	2:20 P.M.
Disposable Boots Left at Facility?	Yes
Vehicle Washed after leaving facility?	Yes
Date and Time that vehicle was washed:	November 8, 2018 at 6:50 A.M.

Table 13: Waterway Documentation

List the pathway taken by EPA inspectors to document the waterway at the facility.
EPA observed flow in the intermittent unnamed tributary north of the facility and documented it with photographs. EPA noted that the tributary contained bed and bank features and flowed to the east. EPA observed this tributary in several locations: at the culvert under the Cattle Walkway and driveway, at the confluence with the runoff from the feedlot, and at the confluence with the runoff pathway from the weep holes by the Heifer Barns.

Table 14a: Sampling Information

Were samples taken?	Yes
Were samples split with facility?	Yes
Number of samples taken?	Six
Was a trip blank created (done prior to entering the facility)?	Yes
Identify which sample is the trip blank.	B01

Were field duplicate samples taken (1 duplicate per 20 samples)?	No
Identify which sample(s) is/are the field duplicate(s)	NA
Were equipment blanks taken (if more than one type of equipment was used to collect samples)?	No
Identify which samples were equipment blanks.	NA
List chain of custody for fecal coliform samples:	No fecal coliform samples were taken.
List chain of custody for nutrient and general chemistry samples:	EPA shipped the samples to R5 CRL via overnight express delivery. R5 CRL received the samples in the morning of November 7, 2018.
Location where samples were preserved:	At the facility.
Name of people involved with sample preservation:	Cheryl Burdett Erin Carviou
Time of sample preservation:	Approximately 12:40 P.M> - 12:50 P.M.
Were samples shipped to a lab?	Yes
Name/Address of shipping location:	The Shipping Mill 3434 Mill Road Sheboygan, WI 53083
Date and time that samples were dropped off for shipping:	11/6/18 at 3:49 P.M.
Did all inspectors involved with the sampling sign the chain of custody?	Yes
Weather conditions at the time of sample collection:	45°F and light rain at times.
Camera name and type used to photograph sample collection:	Olympus TG-4

Table 14b: Facility Sample Information

Number	Location	Date	Time	Collector	Color/ Smell	Photo #	Photographer	Method of Collection	Tag Number	# of Sulfuric Acid Ampoules
S01	Weephole Discharge	11/6/18	10:56 A.M.	Joan Rogers	Dark Brown	PB060079	Joan Rogers	Grab	No tags used	30
S02	Confluence #1	11/6/18	11:25 A.M.	Joan Rogers	Light Brown	PB060082	Joan Rogers	Grab	No tags used	20
S03	Silage Puddle (Front)	11/6/18	11:45 A.M.	Joan Rogers	Strong Odor	PB060083	Joan Rogers	Grab	No tags used	32
S04	Confluence #2	11/6/18	12:08 P.M.	Joan Rogers	Light Brown	PB060097	Joan Rogers	Grab	No tags used	15
S05	Silage Bag Pathway	11/6/18	12:31 P.M.	Joan Rogers	Cloudy	PB060098 PB060099 PB060100	Joan Rogers	Grab	No tags used	15
S06	Off Young Stock Pen	11/6/18	12:38 P.M.	Joan Rogers	Brown	PB060101 PB060102	Joan Rogers	Grab	No tags used	36
B01	FOIA Ex. 6	11/6/18	12:50 P.M.	Joan Rogers	Clear	No photo	Joan Rogers	Grab	No tags used	10

Name of Laboratory where fecal coliform/E.coli samples were taken: No fecal coliform samples were taken.

Name of Laboratory where nutrients and general chemistry samples were taken: R5 CRL

Additional laboratory notes: Sample S03 was not preserved to 2 pH – sample's pH was 3.

Table 15: Sample Results

Sample ID	Sample Description (all liquid samples unless otherwise noted)	Flags	Biochemical Oxygen Demand (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Nitrate-Nitrite N (mg/L)	Ammonia as N (mg/L)	Total Phosphorus (mg/L)	Total Dissolved Solids (mg/L)	Total Suspended Solids (mg/L)
	Typical limits				*0.1 **	*15*	*.05*	*1000*	
S01	Weephole Discharge	(MS), K, J	2000	190	1.44	37.4	31.4	2470	455
S02	Confluence #1	K, J	49	27.7	1.39	8.12	17.2	600	4400
S03	Silage Puddle (Front)	P, UJ, U, J, K	2500	248	U	98.9	43.0	2350	448
S04	Confluence #2	K, J	17	15.5	5.88	1.09	7.42	1120	680
S05	Silage Bag Pathway	U, K, J	640	38.2	U	5.61	16.2	855	460
S06	Off Young Stock Pen	K, J	1600	175	1.54	43.6	23.0	2600	460
B01	FOIA Ex. 6	U, J, K	2	U	U	U	0.04	U	U

U = Not Detected.
UJ = The analyte was not detected at or above the reported limit. The reported limit is an estimate.
P = Samples were not properly preserved upon receipt. Target analyte concentrations and/or reporting limits may not be accurate.
K = The identification of the analyte is acceptable; the reported value may be biased high. The actual value is expected to be less than the reported value.
J = The identification of the analyte is acceptable; the reported value is an estimate.
(MS) = Matrix spike recovery criteria not met for this analyte.

The typical limits are for general use waters and this data comes from the Illinois Water Quality Standards (IEPA 2004) unless otherwise noted. There are no Water Quality Standards for Biochemical Oxygen Demand, Total Kjeldahl Nitrogen, Nitrate-Nitrite, and Total Suspended Solids but some limits are provided and are meant to be a benchmark for comparison only.

* Maximum Nitrate-Nitrite amount for aquatic life (North Carolina State University Water Quality Group)

3. LIST OF DOCUMENTS RECEIVED FROM FACILITY

FOIA Ex. 6 (Personal Farms Pen Count Summary (one page) dated November 6, 2018.

4. AREAS OF CONCERN

EPA observed these areas of concern whereby pollutants have the potential to reach waters of the United States:

1. Manure and process wastewater flows from the weep holes in the concrete wall east of the open pens by the Heifer and Steer Barns to the intermittent unnamed tributary.
2. Manure and process wastewater flows from the Feedlot north of the facility to the intermittent unnamed tributary.
3. Process wastewater from the feed trough north of the Heifer Barn could potentially flow with precipitation through the feedlot and to the intermittent unnamed tributary.
4. Manure and process wastewater from the Cattle Walkway could potentially flow with precipitation to the intermittent unnamed tributary.
5. Process wastewater from the silage bags west of the Open Front Heifer Barn could potentially flow with precipitation to the north and through an ag field and to the intermittent unnamed tributary.
6. Manure and process wastewater from the open pen of the Open Front Heifer Barn could potentially flow with precipitation to the north and through an ag field and to the intermittent unnamed tributary.
7. Manure and process wastewater from the concrete bunker for solids stacking west of the Open Front Heifer Barn could potentially flow with precipitation to the north and through an ag field and to the intermittent unnamed tributary.
8. Process wastewater from the silage bags along Sandy Bay Road could potentially flow with precipitation to the west and through a culvert under the facility driveway and flow into a storm water inlet which outlets in the intermittent unnamed tributary north of the facility.
9. Process wastewater from the silage bags along Sandy Bay Road could potentially flow with precipitation to the east and to an inlet pipe. EPA did not document the outlet for this inlet pipe, but it potentially could be outlet to the intermittent unnamed tributary north of the facility.
10. There is no fencing to prevent cattle from having access to the intermittent unnamed tributary from the feedlot.

5. LIST OF ATTACHMENTS

A) Photo Log and Walk-through.
B) Aerial photograph of FOIA Ex. 6 (Personal Farms, LLC with buildings, waterways and discharge pathways labeled.
C) Sample Analysis

FOIA Ex. 6 (Personal Farms
EPA Inspection November 6, 2018
All photos taken by Joan Rogers, Environmental Scientist, U.S. EPA
Camera: Olympus TG-4
ATTACHMENT A

EPA observed the intermittent unnamed tributary where it flowed under Highway 42 east of the facility. EPA documented that there was flow in the tributary on the day of the inspection.

1: PB060003
Description: Looking upstream at intermittent unnamed tributary that flows under Highway 42. There is plenty of flow in the tributary.
Location: North of Sandy Bay Road on Highway 42.
Camera Direction: West
Date/Time: November 6, 2018 9:02 A.M.

2: PB060004
Description: Looking downstream at intermittent unnamed tributary that flows under Highway 42. There is plenty of flow in the tributary.
Location: North of Sandy Bay Road on Highway 42.
Camera Direction: East
Date/Time: November 6, 2018 9:03 A.M.

3: PB060005
Description: Looking downstream at intermittent unnamed tributary that flows under Highway 42. There is plenty of flow in the tributary.
Location: North of Sandy Bay Road on Highway 42.
Camera Direction: Southeast
Date/Time: November 6, 2018 9:03 A.M.

After entering the facility at approximately 9:00 A.M., donning boot covers, and presenting credentials, EPA performed an opening conference and explained the purpose of the inspection. EPA informed the facility owner that neither EPA personnel or vehicle had been on any other animal facility in over two weeks. After being granted access to the facility, EPA began the walk-through of the facility going west along Sandy Bay Road. The facility owner declined to join EPA on the walk-through of the facility and gave EPA his cell phone number, so he could be called when the walk-through was completed.

The facility owner stated that the county staff had performed a walk-through the previous summer and observed areas that needed improvement. He stated that he had received EQIP funding to develop an NMP and the methods to fix the areas of improvement would be in the NMP.

4: PB060006
Description: Silage bags along Sandy Bay Road.
Location: Along Sandy Bay Road.
Camera Direction: West
Date/Time: November 6, 2018 9:20 A.M.

EPA observed silage leachate on the ground on the east side of the silage bags along Sandy Bay Road and south of the Open Front Heifer Barn. The vegetation on the ground appeared to be nutrient burned. Just to the east of these silage bags, there was a black pipe surrounded by rocks. One end of the pipe was buried in the rocks and the other was open. During the records review after the walk-through, the facility owner stated that the black pipe was a storm water inlet pipe. If silage leachate flows with precipitation to the rocks and seeps into the black inlet pipe, and if the outlet of this pipe was at the intermittent unnamed tributary, then this would be a discharge of pollutants. EPA did not document the location of the black pipe outlet.

5: PB060007
Description: Leachate from silage bags has burned the vegetation and has formed puddles of leachate on the ground.
Location: Along Sandy Bay Road.
Camera Direction: Northwest
Date/Time: November 6, 2018 9:21 A.M.

6: PB060008
Description: A storm water intake pipe flows to the intermittent unnamed tributary north of the facility (blue circle denotes the intake pipe).
Location: Along Sandy Bay Road.
Camera Direction: South
Date/Time: November 6, 2018 9:24 A.M.

7: PB060009
Description: Silage leachate could flow with precipitation to the rock and storm water inlet (blue circle).
Location: Along Sandy Bay Road.
Camera Direction: Southwest
Date/Time: November 6, 2018 9:25 A.M.

To the north of the silage bags, there are two open front buildings. The building to the east had a sign that labeled this building "28". The facility owner named this barn as the Open Front Heifer Barn, which is how it is referred to in the report and photo log. The other barn had a sign that labeled it as building "29", which is how it is referred to in the report and photo log.

Between the two buildings, there was a concrete bunker for solid stacking of manure and used bedding. There was nothing to prevent manure and process wastewater from flowing with precipitation to the east and then to the north.

EPA observed the open pen in front of the Open Front Heifer Barn and noted that there was no containment for the manure and process wastewater at the southeast corner. EPA observed the runoff flow from this pen to the north. EPA also observed a pile of uncovered silage just south of Building 29.

8: PB060010
Description: Open Front Heifer Barn (Building 28) has no containment for manure and process wastewater from the southeast corner of the open pen.
Location: South of the Open Front Heifer Barn.
Camera Direction: North
Date/Time: November 6, 2018 9:25 A.M.

9: PB060011
Description: Open Front Heifer Barn has no containment for manure and process wastewater from the southeast corner of the open pen.
Location: South of the Open Front Heifer Barn.
Camera Direction: Northwest
Date/Time: November 6, 2018 9:26 A.M.

10: PB060012
Description: Manure and process wastewater from the Open Front Heifer Barn pools to the east and flows with precipitation to the north.
Location: Southeast corner of the Open Front Heifer Barn.
Camera Direction: North
Date/Time: November 6, 2018 9:26 A.M.

11: PB060013
Description: Pile of silage in the open. Concrete solids bunker is to the right in the photo.
Location: Southwest of Open Front Heifer Barn.
Camera Direction: West
Date/Time: November 6, 2018 9:27 A.M.

12: PB060014
Description: There is no containment for manure and process wastewater from the solid stacking area east of the Open Front Heifer Barn. Precipitation could carry manure and process wastewater out of the area and to the east and then to the north.
Location: In front of the Open Front Heifer Barn.
Camera Direction: Northwest
Date/Time: November 6, 2018 9:28 A.M.

Continuing along Sandy Bay Road to the west, EPA observed a pool of black liquid on the west side of the same silage bags. The vegetation appeared nutrient burned. Just to the west of the pool of liquid, EPA noted that there was a culvert to allow flow to go west under the facility driveway. Just west of the driveway, there was an inlet pipe. Later, the facility owner stated that the inlet pipe was for storm water and it was piped underground to the north and outlet at the intermittent unnamed tributary. Although EPA did not observe the liquid flowing through the culvert and to the inlet pipe on the day of the inspection, with precipitation, the liquid could flow there. The ground from the pool of liquid to the culvert was saturated.

13: PB060015
Description: A pool of black liquid on the west side of the silage bags along Sandy Bay Road.
Location: Along Sandy Bay Road.
Camera Direction: East
Date/Time: November 6, 2018 9:36 A.M.

14: PB060016
Description: Liquid from the pool could flow to the culvert under the driveway and to a storm water inlet pipe on the other side of the driveway.
Location: Along Sandy Bay Road.
Camera Direction: Southwest
Date/Time: November 6, 2018 9:36 A.M.

EPA walked to the west and observed another area of silage bags along Sandy Bay Road. EPA did not observe any silage leachate from these silage bags.

EPA continued to the west and on the south side of the new Calf Barn. On the west side of the Calf Barn there was a concrete bunker for solids stacking. The walls were only installed on the northern end of the concrete pad. EPA observed used bedding off the concrete pad.

Next to the concrete bunker, there was a tank and piping. Later, the facility owner stated that the tank accepted milk house waste and it was mixed with the solids from the bunker and land applied almost daily.

15: PB060017
Description: Solids stacking area on the west side of the Calf Barn. There is some solids around the bunker that are not contained.
Location: West of the Calf Barn.
Camera Direction: North
Date/Time: November 6, 2018 9:42 A.M.

16: PB060018
Description: Tank collects milkhouse waste and is land applied with the solids that are stacked in the solids stacking area west of the Calf Barn.
Location: West of the Calf Barn.
Camera Direction: East
Date/Time: November 6, 2018 9:45 A.M.
EPA walked north and then east along the next group of silage bags. EPA did not observe any evidence of silage leachate leaving these silage bags.

EPA then walked east along the north side of Barn #2 and the Parlor Barn and Manure Pond. EPA noted that there was more than five feet of freeboard in the Manure Pond and there was some woody growth in the inside berm. The Manure Pond was protected by an electrified fence and EPA did not observe any depth markers. Later, the facility owner confirmed that there were no depth markers installed in the Manure Pond.

EPA then walked to the facility driveway and to the north to observe where the intermittent unnamed tributary flowed through a culvert under the facility driveway. EPA noted that there was flow in the tributary where it went under the facility driveway.

On the east side of the facility driveway was the Cattle Walkway to the Feedlot. There was no vegetation in the Feedlot or on the Cattle Walkway and there was no set back from the tributary. Manure or process wastewater from either the Cattle Walkway or the Feedlot could flow with precipitation to the intermittent unnamed tributary. Electrified fencing prevented EPA from seeing if any manure or process wastewater flowed into the intermittent unnamed tributary from either the Cattle Walkway or the Feedlot. (Later, EPA was able to access this area.)

17: PB060019
Description: Silage bags between Calf Barn and Barn #2.
Location: Behind Calf Barn.
Camera Direction: East
Date/Time: November 6, 2018 9:49 A.M.

18: PB060020
Description: Fencing around the Manure Pond.
Location: Northwest corner of the Manure Pond.
Camera Direction: Southeast
Date/Time: November 6, 2018 9:55 A.M.

19: PB060021
Description: There are no depth markers in the Manure Pond, but there is more than two feet of freeboard.
Location: North of the Manure Pond.
Camera Direction: South
Date/Time: November 6, 2018 9:56 A.M.

20: PB060022
Description: Looking upstream at the consistent flow in the intermittent unnamed tributary north of the facility.
Location: North of facility where the intermittent unnamed tributary flows under the facility driveway.
Camera Direction: West
Date/Time: November 6, 2018 10:00 A.M.

21: PB060023
Description: Looking downstream at the intermittent unnamed tributary north of the facility. Note the lack of vegetation in the Cattle Walkway (foreground) and Feedlot (left side of photo).
Location: North of facility where the intermittent unnamed tributary flows under the facility driveway.
Camera Direction: East
Date/Time: November 6, 2018 10:01 A.M.

22: PB060024
Description: An electrified fence prevented EPA from crossing the Cattle Walkway.
Location: Facility driveway north of the facility at the intermittent unnamed tributary.
Camera Direction: East
Date/Time: November 6, 2018 10:01 A.M.

23: PB060025
Description: No containment for the manure and process wastewater from the Cattle Walkway to the intermittent unnamed tributary.
Location: Facility driveway north of the facility at the intermittent unnamed tributary.
Camera Direction: Southeast
Date/Time: November 6, 2018 10:02 A.M.

24: PB060026
Description: Cattle Walkway to the Feedlot.
Location: Facility driveway north of the facility at the intermittent unnamed tributary.
Camera Direction: South
Date/Time: November 6, 2018 10:02 A.M.

25: PB060027
Description: Pipe discharges liquid from unknown source to the intermittent unnamed tributary. Note that there is no vegetation in the Feedlot all the way to the fence line.
Location: Facility driveway north of the facility at the intermittent unnamed tributary.
Camera Direction: Southeast
Date/Time: November 6, 2018 10:03 A.M.

EPA waked to the south up the facility driveway toward the Machine Shed. Just to the east of the Machine Shed, EPA observed a feed alley that was exposed to the elements. Process wastewater from the feed alley could flow with precipitation downhill to the north and to the intermittent unnamed tributary.

EPA then walked to the south between the Machine Shed and the Manure Pond and observed liquid manure entering the Manure Pond at a concrete ramp at the southwest corner.

EPA continued to the south and observed silage leachate coming from silage bags stored south of the Manure Pond. There had been approximately ¾" of rain the night before and there was a distinct pathway of liquid, although not continuous, along the ground between the Machine Shed and the Manure Pond, going to the north. The vegetation appeared nutrient burned in the pathway and the liquid was cloudy.

EPA also observed the manure and process wastewater from the southeast corner of the open pen of the Open Front Heifer Barn channelized and flowed to the north. Although not continuous, this pathway would eventually join the pathway from the silage bags and the combined flow would go to the north. With precipitation, this flow could reach the intermittent unnamed tributary just north of an ag field. The soil was saturated in the flow pathway.

26: PB060028
Description: Cattle are fed on an open feed alley. Process wastewater from here would flow to the north with precipitation.
Location: Northeast corner of the Machine Shed.
Camera Direction: South
Date/Time: November 6, 2018 10:07 A.M.

27: PB060029
Description: Concrete ramp at southwest corner of the Manure Pond for liquids to enter the pond.
Location: Southeast corner of Manure Pond.
Camera Direction: West
Date/Time: November 6, 2018 10:09 A.M.

28: PB060030
Description: Discharge pathway from silage bags flows to the north.
Location: Behind Open Front Heifer Barn.
Camera Direction: Southwest
Date/Time: November 6, 2018 10:10 A.M.

29: PB060031
Description: Continuation of the flow pathway from the silage bags.
Location: Southwest of the Machine Shed.
Camera Direction: Northeast
Date/Time: November 6, 2018 10:10 A.M.

30: PB060032
Description: Continuation of flow pathway from the silage bags. Flow is not continuous, but soil is saturated.
Location: Southwest of the Machine Shed.
Camera Direction: North
Date/Time: November 6, 2018 10:11 A.M.

31: PB060033
Description: Process wastewater from the silage bags west of the Open Front Heifer Barn. This is the beginning of the flow pathway photographed in the previous three photos.
Location: East side of silage bags that are west of the Open Front Heifer Barn.
Camera Direction: South
Date/Time: November 6, 2018 10:12 A.M.

32: PB060034
Description: Discharge pathway from open pen of the Open Front Heifer Barn.
Location: East of the Open Front Heifer Barn.
Camera Direction: Southwest
Date/Time: November 6, 2018 10:15 A.M.

33: PB060035
Description: Flow pathway from the open pen of the Open Front Heifer Barn flows to the north.
Location: Northeast of the Open Front Heifer Barn.
Camera Direction: North
Date/Time: November 6, 2018 10:15 A.M.

34: PB060036
Description: Flow pathway from the open pen of the Open Front Heifer Barn continues to the north. Even though it wasn't continuous, the ground was saturated.
Location: North of the Open Front Heifer Barn.
Camera Direction: Down and southeast
Date/Time: November 6, 2018 10:16 A.M.

35: PB060037
Description: Flow pathway goes on the west side of silo base and then under the cart and then to the north. The flow from the open pen of the Open Front Heifer Barn joins with the flow pathway from the silage bags to the west of the Open Front Heifer Barn.
Location: Southwest of Machine Shed.
Camera Direction: North
Date/Time: November 6, 2018 10:17 A.M.

EPA then walked to the east to the open pens for the Heifer Barn and Steer Barn. The pens had concrete floors and the slope of the concrete allowed the manure and process wastewater to flow to the east toward a solid stacking bunker. At the base of the east wall of the solid stacking bunker there were three holes approximately one foot above the base and an additional three weep holes below those – at ground level. EPA observed manure and process wastewater flowing to the east from the open pen and out the middle hole at ground level.

EPA walked to the east side of the bunker wall and then walked and documented the pathway of manure and process wastewater all the way to the intermittent unnamed tributary. The flow in the pathway was continuous and EPA documented this with photos and a video (PB060078.MOV) of the liquid from the pathway as it flowed into the intermittent unnamed tributary.

36: PB060038
Description: There is no containment for manure and process wastewater from open concrete lots to the north of the Heifer Barn.
Location: Southeast corner of concrete lots south of Heifer Barn.
Camera Direction: Northwest
Date/Time: November 6, 2018 10:20 A.M.

37: PB060039
Description: Concrete wall on east side of open heifer pens has three weep holes at the bottom where manure and process wastewater can discharge to the east. Weep holes at the base of the concrete (red circles) are directly below the holes in the concrete with green/blue pipe inside. The weep hole to the far right in the photo is plugged with manure.
Location: Concrete lot south of Heifer Barn.
Camera Direction: Northeast
Date/Time: November 6, 2018 10:21 A.M.

38: PB060040
Description: Discharge of manure and process wastewater from the open pen flows directly to the center weep hole in the concrete wall.
Location: Concrete lot south of Heifer Barn.
Camera Direction: West
Date/Time: November 6, 2018 10:21 A.M.

39: PB060041
Description: Discharge pathway from open pen flows to center weep hole in concrete wall.
Location: Concrete lot south of Heifer Barn.
Camera Direction: Northwest and down
Date/Time: November 6, 2018 10:21 A.M.

40: PB060042
Description: Discharge pathway from open pen flows to center weep hole in concrete wall.
Location: Concrete lot south of Heifer Barn.
Camera Direction: North and down
Date/Time: November 6, 2018 10:21 A.M.

41: PB060043
Description: Discharge pathway from open pen flows to center weep hole in concrete wall.
Location: Concrete lot south of Heifer Barn.
Camera Direction: Northeast and down.
Date/Time: November 6, 2018 10:21 A.M.

42: PB060044
Description: There is no containment for manure and process wastewater from another open pen on the east side of Barn #30, the Heifer Barn. Manure and process wastewater would flow to the south and to a weep hole in the concrete wall.
Location: Concrete lot south of Heifer Barn.
Camera Direction: North
Date/Time: November 6, 2018 10:22 A.M.

43: PB060045
Description: The manure and process wastewater exits the weep hole on the east side of the concrete wall.
Location: East side of the concrete wall south of the Heifer Barn.
Camera Direction: Southwest
Date/Time: November 6, 2018 10:23 A.M.

44: PB060046
Description: The discharge pathway from the weep hole in the concrete wall had flow in it the whole way to the intermittent unnamed tributary.
Location: East of the concrete lots south of the Heifer Barn.
Camera Direction: Down and south
Date/Time: November 6, 2018 10:23 A.M.

45: PB060047
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary.
Location: East of the concrete lots south of the Heifer Barn.
Camera Direction: Southeast
Date/Time: November 6, 2018 10:23 A.M.

46: PB060048
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary.
Location: East of the concrete lots south of the Heifer Barn.
Camera Direction: Southeast
Date/Time: November 6, 2018 10:23 A.M.

47: PB060049
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary.
Location: East of the concrete lots south of the Heifer Barn.
Camera Direction: Southwest
Date/Time: November 6, 2018 10:24 A.M.

48: PB060050
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary.
Location: East of the facility.
Camera Direction: East
Date/Time: November 6, 2018 10:24 A.M.

49: PB060051
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary.
Location: East of the facility.
Camera Direction: East
Date/Time: November 6, 2018 10:24 A.M.

50: PB060052
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary.
Location: East of the facility.
Camera Direction: East
Date/Time: November 6, 2018 10:24 A.M.

51: PB060053
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary.
Location: East of the facility.
Camera Direction: Southeast
Date/Time: November 6, 2018 10:25 A.M.

52: PB060054
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary.
Location: East of the facility.
Camera Direction: East
Date/Time: November 6, 2018 10:25 A.M.

53: PB060055
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary.
Location: East of the facility.
Camera Direction: East
Date/Time: November 6, 2018 10:25 A.M.

54: PB060056
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary.
Location: East of the facility.
Camera Direction: East
Date/Time: November 6, 2018 10:25 A.M.

55: PB060057
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary.
Location: East of the facility.
Camera Direction: East and down
Date/Time: November 6, 2018 10:25 A.M.

56: PB060058
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary.
Location: East of the facility.
Camera Direction: Northeast and down
Date/Time: November 6, 2018 10:25 A.M.

57: PB060059
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary.
Location: East of the facility.
Camera Direction: Northeast
Date/Time: November 6, 2018 10:25 A.M.

58: PB060060
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary. Note the piles of manure in the pathway.
Location: East of the facility.
Camera Direction: Northeast
Date/Time: November 6, 2018 10:26 A.M.

59: PB060061
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary.
Location: East of the facility.
Camera Direction: Northeast
Date/Time: November 6, 2018 10:26 A.M.

60: PB060062
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary.
Location: East of the facility.
Camera Direction: Southeast and down
Date/Time: November 6, 2018 10:26 A.M.

61: PB060063
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary.
Location: East of the facility.
Camera Direction: Northeast
Date/Time: November 6, 2018 10:26 A.M.

62: PB060064
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary.
Location: East of the facility.
Camera Direction: Northeast
Date/Time: November 6, 2018 10:27 A.M.

63: PB060065
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary.
Location: East of the facility.
Camera Direction: East
Date/Time: November 6, 2018 10:27 A.M.

64: PB060066
Description: Flow from the agricultural field to the south joins the discharge pathway.
Location: East of the facility.
Camera Direction: Southeast
Date/Time: November 6, 2018 10:28 A.M.

65: PB060067
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary.
Location: East of the facility.
Camera Direction: East
Date/Time: November 6, 2018 10:28 A.M.

66: PB060068
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary. The pathway began having a bed and bank.
Location: East of the facility.
Camera Direction: East
Date/Time: November 6, 2018 10:29 A.M.

67: PB060069
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary.
Location: East of the facility.
Camera Direction: Southeast
Date/Time: November 6, 2018 10:29 A.M.

68: PB060070
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary.
Location: East of the facility.
Camera Direction: East
Date/Time: November 6, 2018 10:30 A.M.

69: PB060071
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary.
Location: East of the facility.
Camera Direction: East
Date/Time: November 6, 2018 10:30 A.M.

70: PB060072
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary.
Location: East of the facility.
Camera Direction: Southeast
Date/Time: November 6, 2018 10:30 A.M.

71: PB060073
Description: EPA documented flow in the discharge pathway from the weep hole in the concrete wall all the way to the intermittent unnamed tributary.
Location: East of the facility.
Camera Direction: Down
Date/Time: November 6, 2018 10:31 A.M.

72: PB060074
Description: Discharge pathway flowed down the embankment to the intermittent unnamed tributary.
Location: East of the facility, at intermittent unnamed tributary.
Camera Direction: Down
Date/Time: November 6, 2018 10:31 A.M.

73: PB060075
Description: Discharge pathway flowed down the embankment to the intermittent unnamed tributary.
Location: East of the facility, at intermittent unnamed tributary.
Camera Direction: Down
Date/Time: November 6, 2018 10:31 A.M.

74: PB060076
Description: The intermittent unnamed tributary upstream of the confluence with the discharge pathway.
Location: East of the facility, at intermittent unnamed tributary.
Camera Direction: Northeast
Date/Time: November 6, 2018 10:31 A.M.

75: PB060077
Description: Discharge pathway flowed down the embankment to the intermittent unnamed tributary.
Location: East of the facility, at intermittent unnamed tributary.
Camera Direction: Down
Date/Time: November 6, 2018 10:31 A.M.

EPA documented the confluence of the discharge pathway from the weep hole with the intermittent unnamed tributary with a movie.

PB060078.MOV

EPA then walked back to the vehicle and gathered sampling supplies. EPA notified the facility owner of the intention to take samples and offered to split them. The facility owner stated that he wanted to split samples with EPA. EPA told him that when the sampling was complete, and we sat down to go over the checklist and records, he would be given the split samples and a chain of custody form and some advice on where he could have the samples analyzed at his own cost.

EPA then took two samples (S01 and S02) of the flow from the concrete lots by the Heifer and Steer Barns. The first sample was from the liquid on the east side of the concrete wall that had flowed out of the weep hole. The second sample was from the discharge pathway at the confluence of the discharge pathway and the intermittent unnamed tributary.

76: PB060079
Description: Sample S01, named "Weephole Discharge" was taken at 10:56 A.M. from the flow out of the weep hole in the concrete wall south of the Heifer Barn. Split samples were taken for the facility.
Location: East side of the concrete wall south of the Heifer Barn.
Camera Direction: Down and Southwest
Date/Time: November 6, 2018 11:01 A.M.

77: PB060080
Description: EPA documented the confluence of the discharge pathway from the weep hole to the intermittent unnamed tributary. The bank was undercut and foam was present at the outlet. A red arrow depicts the direction of flow from the discharge pathway to the intermittent unnamed tributary. EPA named this Confluence #1
Location: At the confluence of the discharge pathway from the weep hole with the intermittent unnamed tributary.
Camera Direction: Down
Date/Time: November 6, 2018 11:23 A.M.

EPA took another video (PB060081.MOV) of the confluence of the discharge pathway and the intemittent unnamed tributary.

PB060081.MOV

78: PB060082
Description: Sample S02, named "Confluence #1", was taken at 11:25 A.M from the confluence of the discharge pathway from the weep hole in the concrete wall and the intermittent unnamed tributary. Split samples were taken for the facility.
Location: At the confluence of the discharge pathway from the weep hole with the intermittent unnamed tributary.
Camera Direction: Down
Date/Time: November 6, 2018 11:30 A.M.

EPA then walked to the front of the facility and took a sample (S03) from the pool of liquid on the west side of the silage bags. The liquid had a very strong unpleasant odor. This liquid could flow to the west through a culvert under the facility driveway and to a storm water inlet.

79: PB060083
Description: Sample S03, named "Silage Puddle (Front)", was taken at 11:45 A.M. from the black liquid in the puddle west of the silage bags along Sandy Bay Road. There was a very strong, foul odor from this liquid. Split samples were taken for the facility.
Location: Along Sandy Bay Road.
Camera Direction: Down
Date/Time: November 6, 2018 11:52 A.M.

EPA then walked between the Manure Pond and the Machine Shed to take a photo of the pathway that runoff from the silage bags and open pen of the Open Front Heifer Barn would take to reach the intermittent unnamed tributary. With precipitation, runoff from these two sources would combine into one flow pathway and flow downhill, to the north, and to an ag field. The flow pathway would then go through a low area in the ag field to the intermittent unnamed tributary. The distance through the ag field was approximately 250 feet.

80: PB060084
Description: Red arrows in photo depict the pathway that manure and process wastewater from the combined flow from the open pen of the Open Front Heifer Barn and the silage bags west of the Open Front Heifer Barn would take to reach the intermittent unnamed tributary. The location of the intermittent unnamed tributary is depicted by a blue arrow.
Location: South of the Machine Shed.
Camera Direction: Northeast
Date/Time: November 6, 2018 11:57 A.M.

EPA then walked further north to where the intermittent unnamed tributary flows through a culvert under the facility driveway and Cattle Walkway. EPA went under the electrified fence and observed the point where the Cattle Walkway, Feedlot and intermittent unnamed tributary meet. Although there was no flow into the intermittent unnamed tributary on the day of the inspection, manure and process wastewater from the Cattle Walkway and Feedlot can flow with precipitation at this location.

EPA then walked east along the southern fence line of the Feedlot. The intermittent unnamed tributary was located just a few feet south of the fence line and the Feedlot was denuded all the way up to the fence line. EPA observed a channel of water along the fence line flowing to the east and eventually it flowed under the fence and to the intermittent unnamed tributary.

81: PB060085
Description: Culvert inlet for the intermittent unnamed tributary under the Cattle Walkway and facility driveway.
Location: North of facility where intermittent unnamed tributary crosses under the facility driveway.
Camera Direction: Northeast and down
Date/Time: November 6, 2018 12:00 P.M.

82: PB060086
Description: Feedlot is completely denuded of vegetation.
Location: Feedlot north of Heifer Barn.
Camera Direction: Southeast
Date/Time: November 6, 2018 12:01 P.M.

83: PB060087
Description: Feedlot is completely denuded of vegetation.
Location: Feedlot north of Heifer Barn.
Camera Direction: North-Northeast
Date/Time: November 6, 2018 12:01 P.M.

84: PB060088
Description: Feedlot is completely denuded of vegetation.
Location: Feedlot north of Heifer Barn.
Camera Direction: Northeast
Date/Time: November 6, 2018 12:02 P.M.

85: PB060089
Description: Discharge pathway from feedlot flows east along electric fenceline before flowing south under the fenceline and into the intermittent unnamed tributary.
Location: Along southern fenceline of feedlot north of facility.
Camera Direction: West
Date/Time: November 6, 2018 12:07 P.M.

86: PB060090
Description: Flow from feedlot flows into the intermittent unnamed tributary.
Location: Along southern fenceline of feedlot north of facility.
Camera Direction: West
Date/Time: November 6, 2018 12:08 P.M.

87: PB060091
Description: Flow from feedlot flows into the intermittent unnamed tributary.
Location: Along southern fenceline of feedlot north of facility.
Camera Direction: Down
Date/Time: November 6, 2018 12:08 P.M.

88: PB060092
Description: Flow from feedlot flows into the intermittent unnamed tributary.
Location: Along southern fenceline of feedlot north of facility.
Camera Direction: Down
Date/Time: November 6, 2018 12:08 P.M.

89: PB060093
Description: Flow from feedlot flows into the intermittent unnamed tributary.
Location: Along southern fenceline of feedlot north of facility.
Camera Direction: Down
Date/Time: November 6, 2018 12:08 P.M.

90: PB060094
Description: Flow from feedlot flows into the intermittent unnamed tributary.
Location: Along southern fenceline of feedlot north of facility.
Camera Direction: South
Date/Time: November 6, 2018 12:08 P.M.

91: PB060095
Description: Flow from feedlot flows into the intermittent unnamed tributary.
Location: Along southern fenceline of feedlot north of facility.
Camera Direction: Down
Date/Time: November 6, 2018 12:08 P.M.

EPA documented the confluence with a video (PB060096.MOV).

PB060096.MOV

EPA took a sample (S04) from the discharge pathway at the confluence of this pathway from the Feedlot and the intermittent unnamed tributary.

92: PB060097
Description: Sample S04, named "Confluence #2", was taken at 12:08 P.M. from the flow of the discharge pathway from the feedlot into the intermittent unnamed tributary. Split samples were taken for the facility.
Location: Along the southern fenceline of the feedlot north of the facility.
Camera Direction: Southwest and down
Date/Time: November 6, 2018 12:16 P.M.

EPA then walked south to the runoff pathways from the silage leachate west of the Open Front Heifer Barn and the open pen of the Open Front Heifer Barn. EPA took samples from each of these pathways before they joined together west of the Machine Shed. EPA took each sample from the furthest downstream pool of liquid in the pathways. By the time EPA took these samples, the rain had ended and the pools of liquid in the pathways was not as continuous as they were when first observed. Sample S05 was from the pathway from the silage bags and sample S06 was from the open pen of the Open Front Heifer Barn. This pathway could also have runoff from the concrete solid stacking bunker just to the west of the Open Front Heifer Barn.

93: PB060098
Description: Sample S05, named "Silage Bag Pathway", was taken at 12:31 P.M. from a pool of liquid in the discharge pathway from the silage bags to the west of the Open Front Heifer Barn. Although this pathway was not observed to flow into the intermittent unnamed tributary on the day of the inspection, with precipitation, this flow has the potential to reach the tributary. This pool of liquid from the silage bags was located before the flow pathway from the silage bags joined the flow pathway from the open pen of the Open Front Heifer Barn. Split samples were taken for the facility.
Location: North of the Open Front Heifer Barn
Camera Direction: Northeast
Date/Time: November 6, 2018 12:34 P.M.

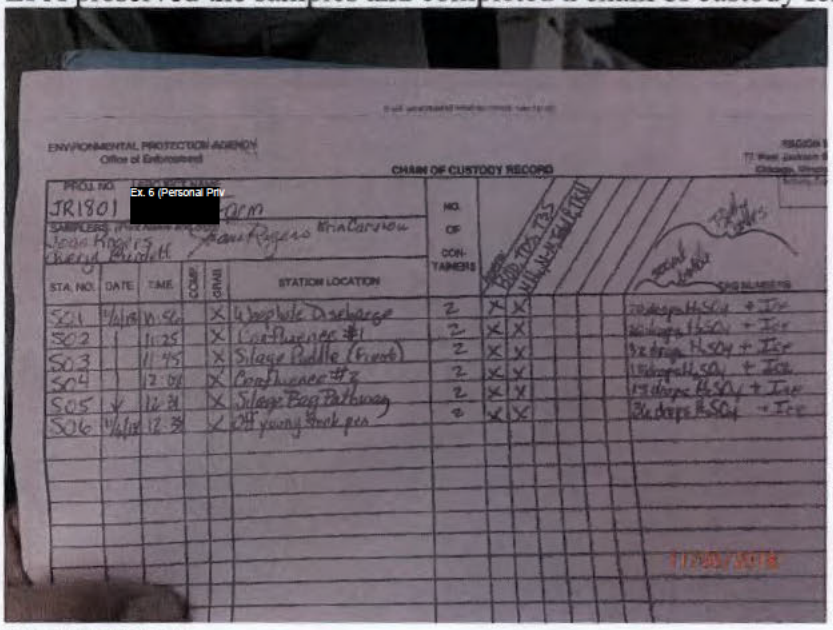
94: PB060099
Description: Overview photo looking downstream at the discharge pathway from sample S05 location.
Location: North of the Open Front Heifer Barn.
Camera Direction: Northeast
Date/Time: November 6, 2018 12:34 P.M.

95: PB060100
Description: Overview photo looking upstream at the discharge pathway from sample S05 location.
Location: North of the Open Front Heifer Barn.
Camera Direction: Southwest
Date/Time: November 6, 2018 12:34 P.M.

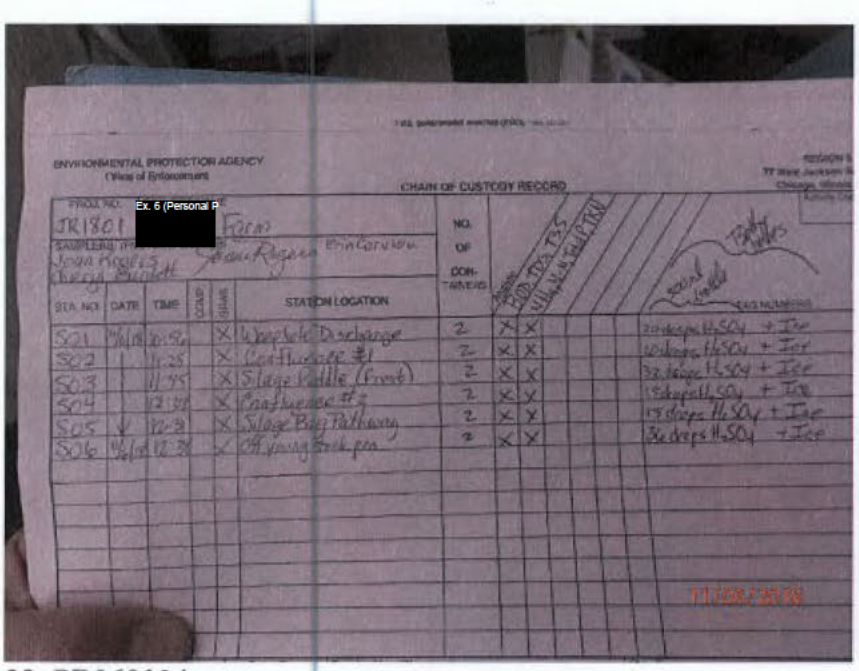
96: PB060101
Description: Sample S06, named "Off Young Stock Pen", was taken at 12:38 P.M. from a pool of liquid in the discharge pathway that flowed from the open pen of the Open Front Heifer Barn. Although this pathway was not observed to flow into the intermittent unnamed tributary on the day of the inspection, with precipitation, this flow has the potential to reach the tributary. This pool of liquid from the open pen of the Open Front Heifer Barn was located before this pathway joined the flow pathway from the silage bags west of the Open Front Heifer Barn. Split samples were taken for the facility.
Location: North of the Open Front Heifer Barn.
Camera Direction: Southwest
Date/Time: November 6, 2018 12:46 P.M.

97: PB060102
Description: Overview photo looking upstream at the discharge pathway from the open pen of the Open Front Heifer Barn.
Location: Northeast of Open Front Heifer Barn.
Camera Direction: South
Date/Time: November 6, 2018 12:46 P.M.

EPA preserved the samples and completed a chain of custody for the facility owner.



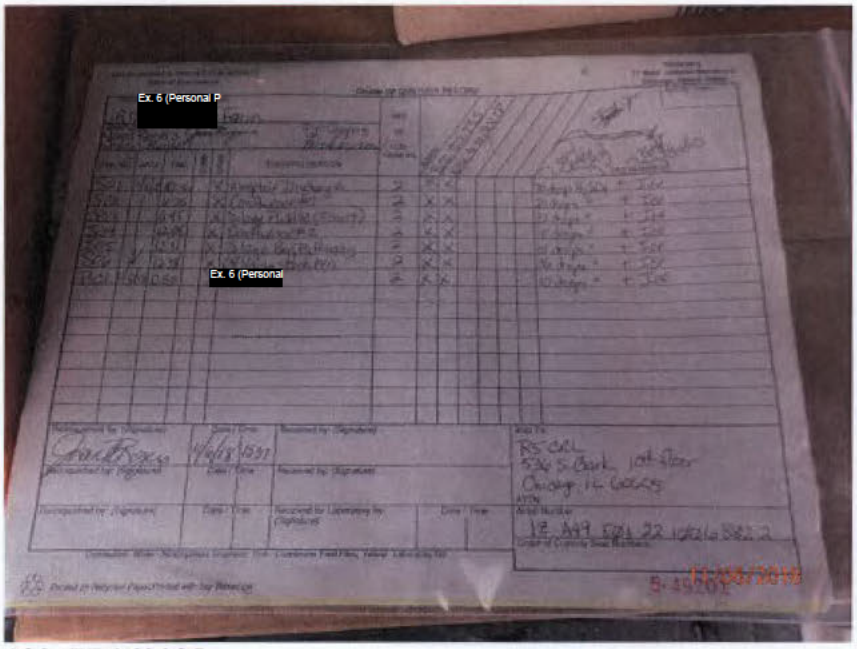
98: PB060103
Description: Chain of custody for split samples provided to the facility.
Location: Near equipment barn.
Camera Direction: Down
Date/Time: November 6, 2018 1:04 P.M.



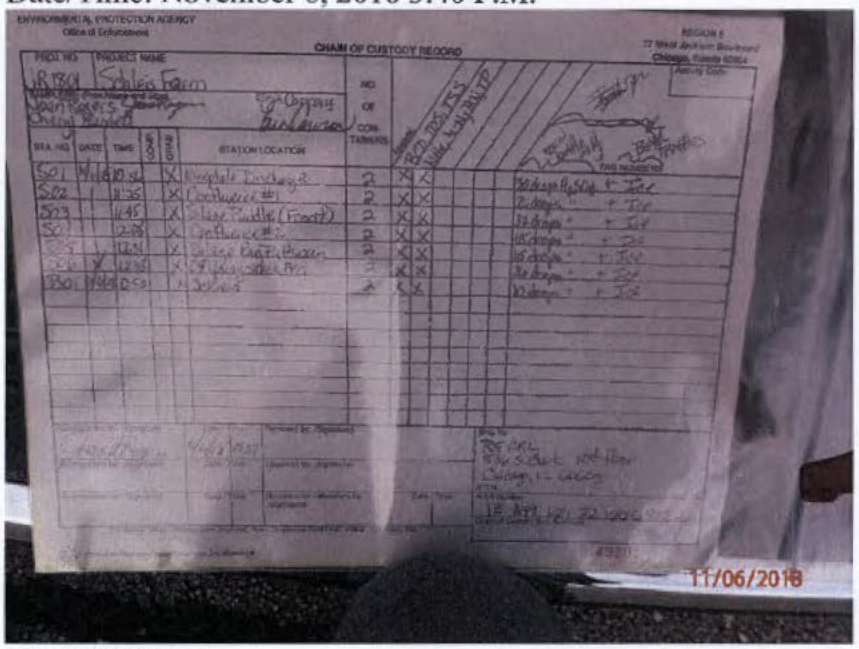
99: PB060104
Description: Duplicate photo of the chain of custody for split samples provided to the facility.
Location: Near equipment barn.
Camera Direction: Down
Date/Time: November 6, 2018 1:05 P.M.

EPA took a field blank for EPA's samples and preserved it with the rest of the samples. EPA completed a chain of custody for the EPA samples. EPA shipped the EPA samples to the Region 5 Chicago Regional Lab (R5 CRL) at 3:49 P.M. from The Shipping Mill, 3434 Mill Road, Sheboygan, WI 53083.

EPA concluded the walk-through of the facility, including taking and preserving the samples at approximately 1:05 P.M. EPA then met with the facility owner in the equipment barn and proceeded to ask questions from the checklist. EPA exited the facility at 2:20 P.M. EPA left their disposable boot covers at the facility.



100: PB060105
Description: Chain of custody form for EPA samples includes a field blank, B01, named "FOIA Ex. 6 (Personal taken at 12:50 P.M.
Location: At the shipping location.
Camera Direction: Down
Date/Time: November 6, 2018 3:40 P.M.



101: PB060106
Description: Duplicate photo for chain of custody for EPA samples.
Location: At the shipping location.
Camera Direction: Down
Date/Time: November 6, 2018 3:40 P.M.

ATTACHMENT B

FOIA Ex. 6 (Personal Priacy) Farms, LLC

FOIA Ex. 6 (Personal Priacy)

Kewaunee, WI 54216

ermittent Unnamed Tributary flows to the east

Feedlot Discharge Pathway

S04

S02

Feed Trough

Manure Pond

Machine Shed

Heifer Barn

Weephole Discharge Pathway

S01

S05

S06

Open Pen Discharge

Parlor Barn

Silage Bags

Barn #2

Silage Bags

Building 29

Steer Barn

Swine Barn

B01

Silage Bags

S03

Silage Bags

0.1 Miles

Legend

FOIA Ex. 6 (Personal Pipes

FOIA Ex. 6 (Personal Samples

FOIA Ex. 6 (Personal Runoff

FOIA Ex. 6 (Personal Facilities

ATTACHMENT C

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CHICAGO REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: **12/4/2018**

Subject: **Review of Region 5 Data for [redacted] Farm**

To: **Water Division, US EPA Region 5**
77 West Jackson Boulevard
Chicago, IL 60604

From: **Nidia Fuentes, Chemist**
US EPA Region 5 Chicago Regional Laboratory

The data transmitted under this cover memo successfully passed CRL's data review procedures as documented in the current Quality Management Plan and applicable Standard Operating Procedures. In accordance with the EPA QA/G-8 *Guidance on Environmental Data Verification and Data Validation* and the U.S. EPA Region 5 RMD QMP, CRL performs data verification on all the data generated internally. CRL does not perform data validation or quality assessment procedures.

This report was reviewed and the information provided herein accurately represents the analysis performed.

Nidia Fuentes

Please contact the analyst with any technical report issues, Amanda Wroble at (312)-353-0375 for sample project concerns, and Sylvia Griffin at (312)-353-9073 with data transmittal questions. Thank you.

Attached are Results for: **[redacted] Farm**

Analyses included in this report:

TKN DA	Total Phosphorus DA

Report Name: 1811002 TKN DA Total Phosphorus DA FINAL Dec 04 18 1243

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: FOIA E 6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	**Reported:**
Chicago IL, 60604	Project Manager: Joan Rogers	Dec-04-18 12:43

Accredited Analyses included in this Report

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

Method: ***EPA 351.2 in Water***
Analysis: ***TKN DA***

Analyte	Certifications
Total Kjeldahl Nitrogen	ISO/IEC 17025:2005

Method: ***EPA 365.4 in Water***
Analysis: ***Total Phosphorus DA***

Analyte	Certifications
Total Phosphorus	ISO/IEC 17025:2005

Analytes not listed above are not accredited by ANAB.

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: FOIA E 6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	**Reported:**
Chicago IL, 60604	Project Manager: Joan Rogers	Dec-04-18 12:43

ANALYSIS CASE NARRATIVE

Analysis List

Total Phosphorus DA

Analyst:Nidia Fuentes
Phone #:312-353-9079

General Information

Samples analyzed:

Sample	Analysis List
1811002-01	Total Phosphorus DA
1811002-02	Total Phosphorus DA
1811002-03	Total Phosphorus DA
1811002-04	Total Phosphorus DA
1811002-05	Total Phosphorus DA
1811002-06	Total Phosphorus DA
1811002-07	Total Phosphorus DA

Sample 1811002-03 (S03) was received above the accepetable pH level (< pH 2), at pH 3. The sample result was flagged with a "P" (Samples were not properly preserved upon receipt; Target analyte concentrations and/or reporting limits may not be accurate.) indicator qualifier and qualified "J" (The identification of the analyte is acceptable; the reported value is an estimate.).

Holding times:

All holding times were met.

Sample Analysis and Results

The samples were analyzed using CRL SOP AIG034B, Version #5. The samples were stored in the refrigerator at all times, except when in use. The data reported herein meets any requirements referenced in the previously mentioned SOP and Sampling QAPP titled "GENERAL FIELD SAMPLING PLAN FOR AFO INSPECTIONS FY 2019" submitted for FY 2019, except for those listed in the Quality Control section.

SOP Based on:

Method List
EPA 365.4

Environmental Protection Agency Region 5

Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: FOIA E 6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	**Reported:**
Chicago IL, 60604	Project Manager: Joan Rogers	Dec-04-18 12:43

Quality Control

All quality control audits were within CRL limits or did not result in qualification of the data except sample matrix spike.

Sample 1811002-01 (S01) spike recovery is not valid, sample require dilution and the spike concentration was diluted out. No qualifier apply on this situation. The quality of the data is not affected.

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: FOIA Ex 6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	**Reported:**
Chicago IL, 60604	Project Manager: Joan Rogers	Dec-04-18 12:43

ANALYSIS CASE NARRATIVE

Analysis List

TKN DA

Analyst: Nidia Fuentes
Phone #: 312-353-9079

General Information

Samples analyzed:

Sample	Analysis List
1811002-01	TKN DA
1811002-02	TKN DA
1811002-03	TKN DA
1811002-04	TKN DA
1811002-05	TKN DA
1811002-06	TKN DA
1811002-07	TKN DA

Sample 1811002-03 (S03) was received above the accepetable pH level (< pH 2), at pH 3. The sample result was flagged with a "P" (Samples were not properly preserved upon receipt; Target analyte concentrations and/or reporting limits may not be accurate.) indicator qualifier and qualified "J" (The identification of the analyte is acceptable; the reported value is an estimate.).

Holding times:

All holding times were met.

Sample Analysis and Results

The samples were analyzed using CRL SOP AIG035B, Version #8. The samples were stored in the refrigerator at all times, except when in use. The data reported herein meets any requirements referenced in the previously mentioned SOP and Sampling QAPP titled "GENERAL FIELD SAMPLING PLAN FOR AFO INSPECTIONS FY 2019" submitted for FY 2019, except for those listed in the Quality Control section.

SOP Based on:

Method List
EPA 351.2

Quality Control

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: FOIA E_6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	**Reported:**
Chicago IL, 60604	Project Manager: Joan Rogers	Dec-04-18 12:43

All quality control audits were within CRL limits or did not result in qualification of the data except for Blank spike and matrix spike.

Blank spike (BS) recovery of 114%, marginally exceeded the QC limits of 90 -110%. When recoveries are above the limit detected analyte in samples are be flagged with a 'K' meaning : The identification of the analyte is acceptable; the reported value may be biased high.see meaning below. The calibration check CCV, performance was acceptable providing an asurance that the digestion procedure was efficient. This situation does not affect the quality of the data.

Sample 1811002-01 (S01) spike recovery exceeded the QC limit of 90 to 110%. The spike was diluted out, no qualifier was necessary.

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

WORK ORDER **Printed: 11/7/2018 3:33:27PM**

1811002

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: FOIA Ex. 6 Farm **Project Number:** JR1801

Report To:

Joan Rogers	77 West Jackson Boulevard	Phone: 312-886-2785
Water Division, US EPA Region 5	Chicago, IL 60604	Fax: (312) 886-2001

Date Due: Dec-24-18 15:00 (47 day TAT)
Received By: Robert Snyder Date Received: Nov-07-18 09:30
Logged In By: Robert Snyder Date Logged In: Nov-07-18 13:56

Samples Received at:	1.6 °C
Sample tags/labels	Yes
Seals Intact	Yes
Received on ice	Yes
Paperwork Included	Yes

Work Order Comments:
pH paper used in SC=18D1901

Sample ID: 1811002-01 **Sampled:** Nov-06-18 10:56 **Matrix:** Water
Sample Name: S01 **Sample Location/Comments:** Weephole Discharge
Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 10:56	pH = 1
BOD	2	Nov-08-18 10:56	pH = 8
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 10:56	pH = 1
Solids, TDS	7	Nov-13-18 10:56	pH = 8
Solids, TSS	7	Nov-13-18 10:56	pH = 8
TKN DA	28	Dec-04-18 10:56	pH = 1
Total Phosphorus DA	28	Dec-04-18 10:56	pH = 1

Sample ID: 1811002-02 **Sampled:** Nov-06-18 11:25 **Matrix:** Water
Sample Name: S02 **Sample Location/Comments:** Confluence # 1
Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 11:25	pH = 1
BOD	2	Nov-08-18 11:25	pH = 8
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 11:25	pH = 1
Solids, TDS	7	Nov-13-18 11:25	pH = 8
Solids, TSS	7	Nov-13-18 11:25	pH = 8

1811002

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: FOIA Ex. 6 Farm **Project Number:** JR1801

Sample ID: 1811002-02 **Sampled:** Nov-06-18 11:25 **Matrix:** Water

Sample Name: S02 **Sample Location/Comments:** Confluence # 1

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
TKN DA	28	Dec-04-18 11:25	pH = 1
Total Phosphorus DA	28	Dec-04-18 11:25	pH = 1

Sample ID: 1811002-03 **Sampled:** Nov-06-18 11:45 **Matrix:** Water

Sample Name: S03 **Sample Location/Comments:** Silage Puddle (Front)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 11:45	pH = 3
BOD	2	Nov-08-18 11:45	pH = 7
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 11:45	pH = 3
Solids, TDS	7	Nov-13-18 11:45	pH = 7
Solids, TSS	7	Nov-13-18 11:45	pH = 7
TKN DA	28	Dec-04-18 11:45	pH = 3
Total Phosphorus DA	28	Dec-04-18 11:45	pH = 3

Sample ID: 1811002-04 **Sampled:** Nov-06-18 12:08 **Matrix:** Water

Sample Name: S04 **Sample Location/Comments:** Confluence # 2

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 12:08	pH = 1
BOD	2	Nov-08-18 12:08	pH = 8
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 12:08	pH = 1
Solids, TDS	7	Nov-13-18 12:08	pH = 8
Solids, TSS	7	Nov-13-18 12:08	pH = 8
TKN DA	28	Dec-04-18 12:08	pH = 1
Total Phosphorus DA	28	Dec-04-18 12:08	pH = 1

1811002

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: FOIA Ex. 6 Farm **Project Number:** JR1801

Sample ID: 1811002-05 **Sampled:** Nov-06-18 12:31 **Matrix:** Water

Sample Name: S05 **Sample Location/Comments:** Silage Bag Pathway

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 12:31	pH = 1
BOD	2	Nov-08-18 12:31	pH = 7
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 12:31	pH = 1
Solids, TDS	7	Nov-13-18 12:31	pH = 7
Solids, TSS	7	Nov-13-18 12:31	pH = 7
TKN DA	28	Dec-04-18 12:31	pH = 1
Total Phosphorus DA	28	Dec-04-18 12:31	pH = 1

Sample ID: 1811002-06 **Sampled:** Nov-06-18 12:38 **Matrix:** Water

Sample Name: S06 **Sample Location/Comments:** Off Young Stock Pen

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 12:38	pH = 1
BOD	2	Nov-08-18 12:38	pH = 8
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 12:38	pH = 1
Solids, TDS	7	Nov-13-18 12:38	pH = 8
Solids, TSS	7	Nov-13-18 12:38	pH = 8
TKN DA	28	Dec-04-18 12:38	pH = 1
Total Phosphorus DA	28	Dec-04-18 12:38	pH = 1

Sample ID: 1811002-07 **Sampled:** Nov-06-18 12:50 **Matrix:** Water

Sample Name: B01 **Sample Location/Comments:** FOIA Ex. 6

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 12:50	pH = 1
BOD	2	Nov-08-18 12:50	pH = 4
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 12:50	pH = 1
Solids, TDS	7	Nov-13-18 12:50	pH = 4
Solids, TSS	7	Nov-13-18 12:50	pH = 4
TKN DA	28	Dec-04-18 12:50	pH = 1
Total Phosphorus DA	28	Dec-04-18 12:50	pH = 1

1811002

US EPA Region 5 Chicago Regional Laboratory

Client:	**Water Division, US EPA Region 5**	**Project Manager:**	**Angela Ockrassa Davis**
Project:	FOIA Ex. 6 **Farm**	**Project Number:**	**JR1801**

WORK ORDER MEMO: NCR 16332

REVIEWED

By Amanda Wroble at 3:34 pm, Nov 07, 2018

Reviewed By Date

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5 77 West Jackson Boulevard Chicago IL, 60604	Project: FOIA Ex. 6 Farm Project Number: JR1801 Project Manager: Joan Rogers	**Reported:** Dec-04-18 12:43

Phosphorus, Colorimetric, EPA 365.4 (modified)
US EPA Region 5 Chicago Regional Laboratory

S01 (1811002-01) **Matrix: Water** **Sampled: Nov-06-18 10:56** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	31.4		0.80	3.00	mg/L	20	B18K031	Nov-13-18	Nov-14-18

S02 (1811002-02) **Matrix: Water** **Sampled: Nov-06-18 11:25** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	17.2		0.80	3.00	mg/L	20	B18K031	Nov-13-18	Nov-14-18

S03 (1811002-03) **Matrix: Water** **Sampled: Nov-06-18 11:45** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	43.0	J, P	0.80	3.00	mg/L	20	B18K031	Nov-13-18	Nov-14-18

S04 (1811002-04) **Matrix: Water** **Sampled: Nov-06-18 12:08** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	7.42		0.80	3.00	mg/L	20	B18K031	Nov-13-18	Nov-14-18

S05 (1811002-05) **Matrix: Water** **Sampled: Nov-06-18 12:31** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	16.2		0.80	3.00	mg/L	20	B18K031	Nov-13-18	Nov-14-18

S06 (1811002-06) **Matrix: Water** **Sampled: Nov-06-18 12:38** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	23.0		0.80	3.00	mg/L	20	B18K031	Nov-13-18	Nov-14-18

B01 (1811002-07) **Matrix: Water** **Sampled: Nov-06-18 12:50** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	0.04	J	0.04	0.15	mg/L	1	B18K031	Nov-13-18	Nov-14-18

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: FOIA E 6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	**Reported:**
Chicago IL, 60604	Project Manager: Joan Rogers	Dec-04-18 12:43

Total Kjeldahl Nitrogen, EPA 351.2 (modified)
US EPA Region 5 Chicago Regional Laboratory

S01 (1811002-01) **Matrix: Water** **Sampled: Nov-06-18 10:56** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	**190**	K	6.00	10.0	mg/L	20	B18K032	Nov-13-18	Nov-14-18

S02 (1811002-02) **Matrix: Water** **Sampled: Nov-06-18 11:25** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	**27.7**	K	6.00	10.0	mg/L	20	B18K032	Nov-13-18	Nov-14-18

S03 (1811002-03) **Matrix: Water** **Sampled: Nov-06-18 11:45** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	**248**	J, K, P	60.0	100	mg/L	200	B18K032	Nov-13-18	Nov-15-18

S04 (1811002-04) **Matrix: Water** **Sampled: Nov-06-18 12:08** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	**15.5**	K	6.00	10.0	mg/L	20	B18K032	Nov-13-18	Nov-14-18

S05 (1811002-05) **Matrix: Water** **Sampled: Nov-06-18 12:31** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	**38.2**	K	6.00	10.0	mg/L	20	B18K032	Nov-13-18	Nov-14-18

S06 (1811002-06) **Matrix: Water** **Sampled: Nov-06-18 12:38** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	**175**	K	6.00	10.0	mg/L	20	B18K032	Nov-13-18	Nov-14-18

B01 (1811002-07) **Matrix: Water** **Sampled: Nov-06-18 12:50** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	U	K	0.30	0.50	mg/L	1	B18K032	Nov-13-18	Nov-14-18

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: FOIA Ex. 6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	**Reported:**
Chicago IL, 60604	Project Manager: Joan Rogers	Dec-04-18 12:43

Notes and Definitions

P	Samples were not properly preserved upon receipt; Target analyte concentrations and/or reporting limits may not be accurate.
K	The identification of the analyte is acceptable; the reported value may be biased high. The actual value is expected to be less than the reported value.
J	The identification of the analyte is acceptable; the reported value is an estimate.
*	This Quality Control measure meets the requirements of the CRL SOP for this analyte.
U	Not Detected
NR	Not Reported
Q	QC limit Exceeded

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5 CHICAGO REGIONAL LABORATORY
536 SOUTH CLARK STREET
CHICAGO, ILLINOIS 60605

Date: 11/15/2018

Subject: Review of Region 5 Data for [redacted] Farm

To: Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604

From: Anna Knoebel, Chemist
US EPA Region 5 Chicago Regional Laboratory

The data transmitted under this cover memo successfully passed CRL's data review procedures as documented in the current Quality Management Plan and applicable Standard Operating Procedures. In accordance with the EPA QA/G-8 *Guidance on Environmental Data Verification and Data Validation* and the U.S. EPA Region 5 RMD QMP, CRL performs data verification on all the data generated internally. CRL does not perform data validation or quality assessment procedures.

This report was reviewed and the information provided herein accurately represents the analysis performed.

Anna Knoebel

Please contact the analyst with any technical report issues, Amanda Wroble at (312)-353-0375 for sample project concerns, and Sylvia Griffin at (312)-353-9073 with data transmittal questions. Thank you.

Attached are Results for: [redacted] Farm

Analyses included in this report:

Nitrate-Nitrite N DA, Enzymatic reduction

Report Name: 1811002 Nitrate-Nitrite N DA, Enzymatic reduction FINAL Nov 15 18 1412

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: FOIA Ex 6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	**Reported:**
Chicago IL, 60604	Project Manager: Joan Rogers	Nov-15-18 14:12

Accredited Analyses included in this Report

ANAB ACCREDITED TESTING LABORATORY

Method: ***NECi Method NO7-0003 in Water***
Analysis: ***Nitrate-Nitrite N DA, Enzymatic reduction***

Analyte	Certifications
Nitrate-Nitrite N	ISO/IEC 17025:2005

Analytes not listed above are not accredited by ANAB.

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: FOIA E 6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	**Reported:**
Chicago IL, 60604	Project Manager: Joan Rogers	Nov-15-18 14:12

ANALYSIS CASE NARRATIVE

Analysis List

Nitrate-Nitrite N DA, Enzymatic reduction

Analyst: Anna Knoebel
Phone #: 312-353-9467

General Information

Samples analyzed:

Sample	Analysis List
1811002-01	Nitrate-Nitrite N DA, Enzymatic reduction
1811002-02	Nitrate-Nitrite N DA, Enzymatic reduction
1811002-03	Nitrate-Nitrite N DA, Enzymatic reduction
1811002-04	Nitrate-Nitrite N DA, Enzymatic reduction
1811002-05	Nitrate-Nitrite N DA, Enzymatic reduction
1811002-06	Nitrate-Nitrite N DA, Enzymatic reduction
1811002-07	Nitrate-Nitrite N DA, Enzymatic reduction

Sample 1811002-03 (S03) was received above the accepetable pH level (< pH 2), at pH 3. The sample result was flagged with a "P" (Samples were not properly preserved upon receipt; Target analyte concentrations and/or reporting limits may not be accurate.) indicator qualifier and qualified "UJ" (The analyte was not detected at or above the reported limit. The reported limit is an estimate).

Holding times:

All holding times were met.

Sample Analysis and Results

The samples were analyzed using CRL SOP AIG031A, Version #4. The samples were stored in the refrigerator at all times, except when in use. The data reported herein meets any requirements referenced in the previously mentioned SOP and Sampling QAPP titled "GENERAL FIELD SAMPLING PLAN FOR AFO INSPECTIONS FY 2018" and submitted for FY 2018, except for those listed in the Quality Control section.

SOP Based on:

Method List
NECi Method NO7-0003

Quality Control

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: FOIA EX 6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	**Reported:**
Chicago IL, 60604	Project Manager: Joan Rogers	Nov-15-18 14:12

All quality control audits were within CRL limits or did not result in qualification of the data except for any listed below.

B18K023-MS2 ***Source Sample: 1811002-01 - [S01]***

Recovery for Nitrate-Nitrite N (112%) was outside acceptance limits (90-110%)

The result was flagged with a "(MS)" (Matrix spike recovery criteria not met for this analyte) indicator qualifier and qualified "K" (The identification of the analyte is acceptable; the reported value may be biased high. The actual value is expected to be less than the reported value.)

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

WORK ORDER **Printed: 11/7/2018 3:33:27PM**

1811002

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: FOIA Ex. 6 Farm **Project Number:** JR1801

Report To:

Joan Rogers
Water Division, US EPA Region 5

77 West Jackson Boulevard
Chicago, IL 60604

Phone: 312-886-2785
Fax: (312) 886-2001

Date Due: Dec-24-18 15:00 (47 day TAT)
Received By: Robert Snyder
Logged In By: Robert Snyder

Date Received: Nov-07-18 09:30
Date Logged In: Nov-07-18 13:56

Samples Received at:	1.6 °C
Sample tags/labels	Yes
Seals Intact	Yes
Received on ice	Yes
Paperwork Included	Yes

Work Order Comments:
pH paper used in SC=18D1901

Sample ID: 1811002-01 **Sampled:** Nov-06-18 10:56 **Matrix:** Water
Sample Name: S01 **Sample Location/Comments:** Weephole Discharge
Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 10:56	pH = 1
BOD	2	Nov-08-18 10:56	pH = 8
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 10:56	pH = 1
Solids, TDS	7	Nov-13-18 10:56	pH = 8
Solids, TSS	7	Nov-13-18 10:56	pH = 8
TKN DA	28	Dec-04-18 10:56	pH = 1
Total Phosphorus DA	28	Dec-04-18 10:56	pH = 1

Sample ID: 1811002-02 **Sampled:** Nov-06-18 11:25 **Matrix:** Water
Sample Name: S02 **Sample Location/Comments:** Confluence # 1
Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 11:25	pH = 1
BOD	2	Nov-08-18 11:25	pH = 8
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 11:25	pH = 1
Solids, TDS	7	Nov-13-18 11:25	pH = 8
Solids, TSS	7	Nov-13-18 11:25	pH = 8

1811002

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: FOIA Ex. 6 Farm **Project Number:** JR1801

Sample ID: 1811002-02 **Sampled:** Nov-06-18 11:25 **Matrix:** Water

Sample Name: S02 **Sample Location/Comments:** Confluence # 1

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
TKN DA	28	Dec-04-18 11:25	pH = 1
Total Phosphorus DA	28	Dec-04-18 11:25	pH = 1

Sample ID: 1811002-03 **Sampled:** Nov-06-18 11:45 **Matrix:** Water

Sample Name: S03 **Sample Location/Comments:** Silage Puddle (Front)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 11:45	pH = 3
BOD	2	Nov-08-18 11:45	pH = 7
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 11:45	pH = 3
Solids, TDS	7	Nov-13-18 11:45	pH = 7
Solids, TSS	7	Nov-13-18 11:45	pH = 7
TKN DA	28	Dec-04-18 11:45	pH = 3
Total Phosphorus DA	28	Dec-04-18 11:45	pH = 3

Sample ID: 1811002-04 **Sampled:** Nov-06-18 12:08 **Matrix:** Water

Sample Name: S04 **Sample Location/Comments:** Confluence # 2

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 12:08	pH = 1
BOD	2	Nov-08-18 12:08	pH = 8
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 12:08	pH = 1
Solids, TDS	7	Nov-13-18 12:08	pH = 8
Solids, TSS	7	Nov-13-18 12:08	pH = 8
TKN DA	28	Dec-04-18 12:08	pH = 1
Total Phosphorus DA	28	Dec-04-18 12:08	pH = 1

1811002

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: FOIA Ex. 6 Farm **Project Number:** JR1801

Sample ID: 1811002-05 **Sampled:** Nov-06-18 12:31 **Matrix:** Water

Sample Name: S05 **Sample Location/Comments:** Silage Bag Pathway

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 12:31	pH = 1
BOD	2	Nov-08-18 12:31	pH = 7
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 12:31	pH = 1
Solids, TDS	7	Nov-13-18 12:31	pH = 7
Solids, TSS	7	Nov-13-18 12:31	pH = 7
TKN DA	28	Dec-04-18 12:31	pH = 1
Total Phosphorus DA	28	Dec-04-18 12:31	pH = 1

Sample ID: 1811002-06 **Sampled:** Nov-06-18 12:38 **Matrix:** Water

Sample Name: S06 **Sample Location/Comments:** Off Young Stock Pen

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 12:38	pH = 1
BOD	2	Nov-08-18 12:38	pH = 8
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 12:38	pH = 1
Solids, TDS	7	Nov-13-18 12:38	pH = 8
Solids, TSS	7	Nov-13-18 12:38	pH = 8
TKN DA	28	Dec-04-18 12:38	pH = 1
Total Phosphorus DA	28	Dec-04-18 12:38	pH = 1

Sample ID: 1811002-07 **Sampled:** Nov-06-18 12:50 **Matrix:** Water

Sample Name: B01 **Sample Location/Comments:** FOIA Ex. 6

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 12:50	pH = 1
BOD	2	Nov-08-18 12:50	pH = 4
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 12:50	pH = 1
Solids, TDS	7	Nov-13-18 12:50	pH = 4
Solids, TSS	7	Nov-13-18 12:50	pH = 4
TKN DA	28	Dec-04-18 12:50	pH = 1
Total Phosphorus DA	28	Dec-04-18 12:50	pH = 1

1811002

US EPA Region 5 Chicago Regional Laboratory

Client:	**Water Division, US EPA Region 5**	**Project Manager:**	**Angela Ockrassa Davis**
Project:	FOIA Ex. 6 **Farm**	**Project Number:**	**JR1801**

WORK ORDER MEMO: NCR 16332

REVIEWED

By Amanda Wroble at 3:34 pm, Nov 07, 2018

Reviewed By Date

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: FOIA E 6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	**Reported:**
Chicago IL, 60604	Project Manager: Joan Rogers	Nov-15-18 14:12

Nitrate-Nitrite Nitrogen, Nitrate Reductase, NECi Method N07-0003 (modified)
US EPA Region 5 Chicago Regional Laboratory

S01 (1811002-01) **Matrix: Water** **Sampled: Nov-06-18 10:56** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	1.44	(MS), K	0.05	0.10	mg/L	1	B18K023	Nov-08-18	Nov-08-18

S02 (1811002-02) **Matrix: Water** **Sampled: Nov-06-18 11:25** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	1.39		0.05	0.10	mg/L	1	B18K023	Nov-08-18	Nov-08-18

S03 (1811002-03) **Matrix: Water** **Sampled: Nov-06-18 11:45** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	U	P, UJ, U	0.05	0.10	mg/L	1	B18K023	Nov-08-18	Nov-08-18

S04 (1811002-04) **Matrix: Water** **Sampled: Nov-06-18 12:08** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	5.88		0.50	1.00	mg/L	10	B18K023	Nov-08-18	Nov-08-18

S05 (1811002-05) **Matrix: Water** **Sampled: Nov-06-18 12:31** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	U	U	0.05	0.10	mg/L	1	B18K023	Nov-08-18	Nov-08-18

S06 (1811002-06) **Matrix: Water** **Sampled: Nov-06-18 12:38** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	1.54		0.05	0.10	mg/L	1	B18K023	Nov-08-18	Nov-08-18

B01 (1811002-07) **Matrix: Water** **Sampled: Nov-06-18 12:50** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	U	U	0.05	0.10	mg/L	1	B18K023	Nov-08-18	Nov-08-18

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: FOIA E 6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	**Reported:**
Chicago IL, 60604	Project Manager: Joan Rogers	Nov-15-18 14:12

Notes and Definitions

UJ	The analyte was not detected at or above the reported limit. The reported limit is an estimate.
P	Samples were not properly preserved upon receipt; Target analyte concentrations and/or reporting limits may not be accurate.
K	The identification of the analyte is acceptable; the reported value may be biased high. The actual value is expected to be less than the reported value.
J	The identification of the analyte is acceptable; the reported value is an estimate.
(MS)	Matrix spike recovery criteria not met for this analyte
U	Not Detected
NR	Not Reported
Q	QC limit Exceeded

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5 CHICAGO REGIONAL LABORATORY
536 SOUTH CLARK STREET
CHICAGO, ILLINOIS 60605

Date: 12/6/2018

Subject: Review of Region 5 Data for FOIA Ex. 6 Farm

To: Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604

From: Anna Knoebel, Chemist
US EPA Region 5 Chicago Regional Laboratory

The data transmitted under this cover memo successfully passed CRL's data review procedures as documented in the current Quality Management Plan and applicable Standard Operating Procedures. In accordance with the EPA QA/G-8 *Guidance on Environmental Data Verification and Data Validation* and the U.S. EPA Region 5 RMD QMP, CRL performs data verification on all the data generated internally. CRL does not perform data validation or quality assessment procedures.

This report was reviewed and the information provided herein accurately represents the analysis performed.

Anna Knoebel

Please contact the analyst with any technical report issues, Amanda Wroble at (312)-353-0375 for sample project concerns, and Sylvia Griffin at (312)-353-9073 with data transmittal questions. Thank you.

Attached are Results for: FOIA Ex. 6 (Personal) Farm

Analyses included in this report:

Ammonia N DA, Distilled

Report Name: 1811002 Ammonia N DA, Distilled FINAL Dec 06 18 1207

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: FOIA Ex. 6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	**Reported:**
Chicago IL, 60604	Project Manager: Joan Rogers	Dec-06-18 12:07

Accredited Analyses included in this Report

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

Method: ***SM 4500-H+ B in Water***
Analysis: ***Ammonia N DA, Distilled***

Analyte	Certifications
Ammonia as N	ISO/IEC 17025:2005

Analytes not listed above are not accredited by ANAB.

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: FOIA E 6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	**Reported:**
Chicago IL, 60604	Project Manager: Joan Rogers	Dec-06-18 12:07

ANALYSIS CASE NARRATIVE

Analysis List

Ammonia N DA, Distilled

Analyst: Anna Knoebel
Phone #: 312-353-9467

General Information

Samples analyzed:

Sample	Analysis List
1811002-01	Ammonia N DA, Distilled
1811002-02	Ammonia N DA, Distilled
1811002-03	Ammonia N DA, Distilled
1811002-04	Ammonia N DA, Distilled
1811002-05	Ammonia N DA, Distilled
1811002-06	Ammonia N DA, Distilled
1811002-07	Ammonia N DA, Distilled

Sample 1811002-03 (S03) was received above the accepetable pH level (< pH 2), at pH 3. The sample result was flagged with a "P" (Samples were not properly preserved upon receipt; Target analyte concentrations and/or reporting limits may not be accurate.) indicator qualifier and qualified "J" (The identification of the analyte is acceptable; the reported value is an estimate.).

Holding times:

All holding times were met.

Sample Analysis and Results

The samples were analyzed using CRL SOP AIG029B, Version #6. The samples were stored in the refrigerator at all times, except when in use. The data reported herein meets any requirements referenced in the previously mentioned SOP and Sampling QAPP titled "GENERAL FIELD SAMPLING PLAN FOR AFO INSPECTIONS FY 2019" submitted for FY 2019, except for those listed in the Quality Control section.

SOP Based on:

Method List
SM 4500-H+ B

Quality Control

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

WORK ORDER **Printed: 11/7/2018 3:33:27PM**

1811002

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: FOIA Ex. 6 Farm **Project Number:** JR1801

Report To:

Joan Rogers
Water Division, US EPA Region 5

77 West Jackson Boulevard
Chicago, IL 60604

Phone: 312-886-2785
Fax: (312) 886-2001

Date Due: Dec-24-18 15:00 (47 day TAT)
Received By: Robert Snyder
Logged In By: Robert Snyder

Date Received: Nov-07-18 09:30
Date Logged In: Nov-07-18 13:56

Samples Received at:	1.6 °C
Sample tags/labels	Yes
Seals Intact	Yes
Received on ice	Yes
Paperwork Included	Yes

Work Order Comments:
pH paper used in SC=18D1901

Sample ID: 1811002-01 **Sampled:** Nov-06-18 10:56 **Matrix:** Water
Sample Name: S01 **Sample Location/Comments:** Weephole Discharge
Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 10:56	pH = 1
BOD	2	Nov-08-18 10:56	pH = 8
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 10:56	pH = 1
Solids, TDS	7	Nov-13-18 10:56	pH = 8
Solids, TSS	7	Nov-13-18 10:56	pH = 8
TKN DA	28	Dec-04-18 10:56	pH = 1
Total Phosphorus DA	28	Dec-04-18 10:56	pH = 1

Sample ID: 1811002-02 **Sampled:** Nov-06-18 11:25 **Matrix:** Water
Sample Name: S02 **Sample Location/Comments:** Confluence # 1
Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 11:25	pH = 1
BOD	2	Nov-08-18 11:25	pH = 8
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 11:25	pH = 1
Solids, TDS	7	Nov-13-18 11:25	pH = 8
Solids, TSS	7	Nov-13-18 11:25	pH = 8

1811002

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: FOIA Ex. 6 Farm **Project Number:** JR1801

Sample ID: 1811002-02 **Sampled:** Nov-06-18 11:25 **Matrix:** Water

Sample Name: S02 **Sample Location/Comments:** Confluence # 1

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
TKN DA	28	Dec-04-18 11:25	pH = 1
Total Phosphorus DA	28	Dec-04-18 11:25	pH = 1

Sample ID: 1811002-03 **Sampled:** Nov-06-18 11:45 **Matrix:** Water

Sample Name: S03 **Sample Location/Comments:** Silage Puddle (Front)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 11:45	pH = 3
BOD	2	Nov-08-18 11:45	pH = 7
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 11:45	pH = 3
Solids, TDS	7	Nov-13-18 11:45	pH = 7
Solids, TSS	7	Nov-13-18 11:45	pH = 7
TKN DA	28	Dec-04-18 11:45	pH = 3
Total Phosphorus DA	28	Dec-04-18 11:45	pH = 3

Sample ID: 1811002-04 **Sampled:** Nov-06-18 12:08 **Matrix:** Water

Sample Name: S04 **Sample Location/Comments:** Confluence # 2

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 12:08	pH = 1
BOD	2	Nov-08-18 12:08	pH = 8
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 12:08	pH = 1
Solids, TDS	7	Nov-13-18 12:08	pH = 8
Solids, TSS	7	Nov-13-18 12:08	pH = 8
TKN DA	28	Dec-04-18 12:08	pH = 1
Total Phosphorus DA	28	Dec-04-18 12:08	pH = 1

1811002

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: FOIA Ex. 6 Farm **Project Number:** JR1801

Sample ID: 1811002-05 **Sampled:** Nov-06-18 12:31 **Matrix:** Water

Sample Name: S05 **Sample Location/Comments:** Silage Bag Pathway

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 12:31	pH = 1
BOD	2	Nov-08-18 12:31	pH = 7
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 12:31	pH = 1
Solids, TDS	7	Nov-13-18 12:31	pH = 7
Solids, TSS	7	Nov-13-18 12:31	pH = 7
TKN DA	28	Dec-04-18 12:31	pH = 1
Total Phosphorus DA	28	Dec-04-18 12:31	pH = 1

Sample ID: 1811002-06 **Sampled:** Nov-06-18 12:38 **Matrix:** Water

Sample Name: S06 **Sample Location/Comments:** Off Young Stock Pen

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 12:38	pH = 1
BOD	2	Nov-08-18 12:38	pH = 8
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 12:38	pH = 1
Solids, TDS	7	Nov-13-18 12:38	pH = 8
Solids, TSS	7	Nov-13-18 12:38	pH = 8
TKN DA	28	Dec-04-18 12:38	pH = 1
Total Phosphorus DA	28	Dec-04-18 12:38	pH = 1

Sample ID: 1811002-07 **Sampled:** Nov-06-18 12:50 **Matrix:** Water

Sample Name: B01 **Sample Location/Comments:** FOIA Ex. 6

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 12:50	pH = 1
BOD	2	Nov-08-18 12:50	pH = 4
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 12:50	pH = 1
Solids, TDS	7	Nov-13-18 12:50	pH = 4
Solids, TSS	7	Nov-13-18 12:50	pH = 4
TKN DA	28	Dec-04-18 12:50	pH = 1
Total Phosphorus DA	28	Dec-04-18 12:50	pH = 1

1811002

US EPA Region 5 Chicago Regional Laboratory

Client:	**Water Division, US EPA Region 5**	**Project Manager:**	**Angela Ockrassa Davis**
Project:	FOIA Ex. 6 **Farm**	**Project Number:**	**JR1801**

WORK ORDER MEMO: NCR 16332

REVIEWED

By Amanda Wroble at 3:34 pm, Nov 07, 2018

Reviewed By Date

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: FOIA Ex. 6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	**Reported:**
Chicago IL, 60604	Project Manager: Joan Rogers	Dec-06-18 12:07

Ammonia Nitrogen, SM4500B & H (modified)
US EPA Region 5 Chicago Regional Laboratory

S01 (1811002-01) **Matrix: Water** **Sampled: Nov-06-18 10:56** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	37.4		1.80	2.00	mg/L	10	B18K051	Nov-28-18	Nov-28-18

S02 (1811002-02) **Matrix: Water** **Sampled: Nov-06-18 11:25** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	8.12		1.80	2.00	mg/L	10	B18K051	Nov-28-18	Nov-28-18

S03 (1811002-03) **Matrix: Water** **Sampled: Nov-06-18 11:45** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	98.9	J, P	7.20	8.00	mg/L	40	B18K051	Nov-28-18	Nov-28-18

S04 (1811002-04) **Matrix: Water** **Sampled: Nov-06-18 12:08** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	1.09		0.18	0.20	mg/L	1	B18K051	Nov-28-18	Nov-28-18

S05 (1811002-05) **Matrix: Water** **Sampled: Nov-06-18 12:31** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	5.61		1.80	2.00	mg/L	10	B18K051	Nov-28-18	Nov-28-18

S06 (1811002-06) **Matrix: Water** **Sampled: Nov-06-18 12:38** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	43.6		1.80	2.00	mg/L	10	B18K051	Nov-28-18	Nov-28-18

B01 (1811002-07) **Matrix: Water** **Sampled: Nov-06-18 12:50** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	U		0.18	0.20	mg/L	1	B18K051	Nov-28-18	Nov-28-18

Environmental Protection Agency Region 5

Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: FOIA EX. 6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	**Reported:**
Chicago IL, 60604	Project Manager: Joan Rogers	Dec-06-18 12:07

Notes and Definitions

P	Samples were not properly preserved upon receipt; Target analyte concentrations and/or reporting limits may not be accurate.
J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Not Detected
NR	Not Reported
Q	QC limit Exceeded

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CHICAGO REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: 12/10/2018

Subject: Review of Region 5 Data for [redacted] Farm

To: Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604

From: Colin Breslin, Chemist
US EPA Region 5 Chicago Regional Laboratory

The data transmitted under this cover memo successfully passed CRL's data review procedures as documented in the current Quality Management Plan and applicable Standard Operating Procedures. In accordance with the EPA QA/G-8 *Guidance on Environmental Data Verification and Data Validation* and the U.S. EPA Region 5 RMD QMP, CRL performs data verification on all the data generated internally. CRL does not perform data validation or quality assessment procedures.

This report was reviewed and the information provided herein accurately represents the analysis performed.

Colin Breslin

Please contact the analyst with any technical report issues, Amanda Wroble at (312)-353-0375 for sample project concerns, and Sylvia Griffin at (312)-353-9073 with data transmittal questions. Thank you.

Attached are Results for: [redacted] Farm

Analyses included in this report:

BOD

Report Name: 1811002 BOD FINAL Dec 10 18 1513

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: FOIA Ex. 6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	**Reported:**
Chicago IL, 60604	Project Manager: Joan Rogers	Dec-10-18 15:13

Accredited Analyses included in this Report

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

Method: ***SM 5210 B in Water***
Analysis: ***BOD***

Analyte	Certifications
Biochemical Oxygen Demand	ISO/IEC 17025:2005

Analytes not listed above are not accredited by ANAB.

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: FOIA E 6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	**Reported:**
Chicago IL, 60604	Project Manager: Joan Rogers	Dec-10-18 15:13

Analysis Case Narrative

General Information

Water samples for the analysis of 5-day biochemical oxygen demand (BOD5) were received at the Chicago Regional Laboratory (CRL). The total number of samples and date of receipt are included in the body of this report. The samples met the temperature preservation requirements. The samples were analyzed within the 48-hour hold time. The designated analyst, Colin Breslin, can be reached at 312-886-2912.

The samples were prepared and analyzed according to CRL SOP AIG006A, Version 4 (based on SM 5210B).

Sample Analysis and Results

The data reported herein meets the requirements referenced in the SOP used for analysis and any laboratory specifications stated in the General Field Sampling Plan for AFO Inspections, dated FY 2018. CRL reporting limit requirements were met.

The laboratory temperature was cold during the beginning of preparation but warmed up during analysis and at a warmer temperature DO was likely lost. This was evidenced by blank results that exceeded the requirement of blank depletions less than or equal to 0.20 mg/L. Typically, temperature issues and loss of DO have caused high bias in BOD results.

The oxygen depletions from initial day to final day were not valid for the laboratory seed correction factor (SCF). The final dissolved oxygen (DO) readings across the SCF dilution series were all less than the requirement of a final DO of at least 1 mg/L. This was due to a strong seed. The SCF had to be calculated from only one bottle with the greatest dilution, i.e. least amount of seed, which still had an invalid final DO. This resulted in a large SCF, which in turn causes a low bias in BOD results when the SCF is calculated out. This was likely evidenced in the glucose-glutamic acid (GGA) check standard recovering within acceptable quality control (QC) limits.

A large SCF, from using an invalid depletion, that likely caused low bias in the calculated BOD, and high blank results due to loss of DO from temperature control issues that typically cause a high bias in results were offsetting factors that make it difficult to discern any bias in the results. For these reasons all samples results were flagged as estimated (J - The identification of the analyte is acceptable; the reported value is an estimate).

Sample with CRL identification number 1811002-05 did not have a valid final DO as it was less than 1 mg/L. This was likely due to the strong seed as well as contribution from BOD in the sample. The result remains flagged as estimated.

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
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Water Division, US EPA Region 5	Project: FOIA EX 6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	**Reported:**
Chicago IL, 60604	Project Manager: Joan Rogers	Dec-10-18 15:13

Quality Control

All Quality Control (QC) audits were within CRL limits for the requested analytes or did not result in qualification of the data, except as follows:

Laboratory Blank Exceedances:
The depletion from initial day to final day of the dilution water with no seed blanks (DWNS) were greater than the allowed depletion of less than or equal to 0.20 mg/L at 0.70 mg/L and 0.76 mg/L. This was likely due to temperature differences during the preparation day and DO was lost. Results were flagged as estimated as stated above.

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

WORK ORDER **Printed: 11/7/2018 3:33:27PM**

1811002

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: FOIA Ex. 6 Farm **Project Number:** JR1801

Report To:

Joan Rogers
Water Division, US EPA Region 5

77 West Jackson Boulevard
Chicago, IL 60604

Phone: 312-886-2785
Fax: (312) 886-2001

Date Due: Dec-24-18 15:00 (47 day TAT)
Received By: Robert Snyder Date Received: Nov-07-18 09:30
Logged In By: Robert Snyder Date Logged In: Nov-07-18 13:56

Samples Received at:	1.6 °C
Sample tags/labels	Yes
Seals Intact	Yes
Received on ice	Yes
Paperwork Included	Yes

Work Order Comments:
pH paper used in SC=18D1901

Sample ID: 1811002-01 **Sampled:** Nov-06-18 10:56 **Matrix:** Water
Sample Name: S01 **Sample Location/Comments:** Weephole Discharge
Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 10:56	pH = 1
BOD	2	Nov-08-18 10:56	pH = 8
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 10:56	pH = 1
Solids, TDS	7	Nov-13-18 10:56	pH = 8
Solids, TSS	7	Nov-13-18 10:56	pH = 8
TKN DA	28	Dec-04-18 10:56	pH = 1
Total Phosphorus DA	28	Dec-04-18 10:56	pH = 1

Sample ID: 1811002-02 **Sampled:** Nov-06-18 11:25 **Matrix:** Water
Sample Name: S02 **Sample Location/Comments:** Confluence # 1
Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 11:25	pH = 1
BOD	2	Nov-08-18 11:25	pH = 8
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 11:25	pH = 1
Solids, TDS	7	Nov-13-18 11:25	pH = 8
Solids, TSS	7	Nov-13-18 11:25	pH = 8

1811002

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: FOIA Ex. 6 Farm **Project Number:** JR1801

Sample ID: 1811002-02 **Sampled:** Nov-06-18 11:25 **Matrix:** Water

Sample Name: S02 **Sample Location/Comments:** Confluence # 1

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
TKN DA	28	Dec-04-18 11:25	pH = 1
Total Phosphorus DA	28	Dec-04-18 11:25	pH = 1

Sample ID: 1811002-03 **Sampled:** Nov-06-18 11:45 **Matrix:** Water

Sample Name: S03 **Sample Location/Comments:** Silage Puddle (Front)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 11:45	pH = 3
BOD	2	Nov-08-18 11:45	pH = 7
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 11:45	pH = 3
Solids, TDS	7	Nov-13-18 11:45	pH = 7
Solids, TSS	7	Nov-13-18 11:45	pH = 7
TKN DA	28	Dec-04-18 11:45	pH = 3
Total Phosphorus DA	28	Dec-04-18 11:45	pH = 3

Sample ID: 1811002-04 **Sampled:** Nov-06-18 12:08 **Matrix:** Water

Sample Name: S04 **Sample Location/Comments:** Confluence # 2

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 12:08	pH = 1
BOD	2	Nov-08-18 12:08	pH = 8
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 12:08	pH = 1
Solids, TDS	7	Nov-13-18 12:08	pH = 8
Solids, TSS	7	Nov-13-18 12:08	pH = 8
TKN DA	28	Dec-04-18 12:08	pH = 1
Total Phosphorus DA	28	Dec-04-18 12:08	pH = 1

1811002

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: FOIA Ex. 6 Farm **Project Number:** JR1801

Sample ID: 1811002-05 **Sampled:** Nov-06-18 12:31 **Matrix:** Water

Sample Name: S05 **Sample Location/Comments:** Silage Bag Pathway

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 12:31	pH = 1
BOD	2	Nov-08-18 12:31	pH = 7
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 12:31	pH = 1
Solids, TDS	7	Nov-13-18 12:31	pH = 7
Solids, TSS	7	Nov-13-18 12:31	pH = 7
TKN DA	28	Dec-04-18 12:31	pH = 1
Total Phosphorus DA	28	Dec-04-18 12:31	pH = 1

Sample ID: 1811002-06 **Sampled:** Nov-06-18 12:38 **Matrix:** Water

Sample Name: S06 **Sample Location/Comments:** Off Young Stock Pen

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 12:38	pH = 1
BOD	2	Nov-08-18 12:38	pH = 8
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 12:38	pH = 1
Solids, TDS	7	Nov-13-18 12:38	pH = 8
Solids, TSS	7	Nov-13-18 12:38	pH = 8
TKN DA	28	Dec-04-18 12:38	pH = 1
Total Phosphorus DA	28	Dec-04-18 12:38	pH = 1

Sample ID: 1811002-07 **Sampled:** Nov-06-18 12:50 **Matrix:** Water

Sample Name: B01 **Sample Location/Comments:** FOIA Ex. 6

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 12:50	pH = 1
BOD	2	Nov-08-18 12:50	pH = 4
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 12:50	pH = 1
Solids, TDS	7	Nov-13-18 12:50	pH = 4
Solids, TSS	7	Nov-13-18 12:50	pH = 4
TKN DA	28	Dec-04-18 12:50	pH = 1
Total Phosphorus DA	28	Dec-04-18 12:50	pH = 1

1811002

US EPA Region 5 Chicago Regional Laboratory

Client:	**Water Division, US EPA Region 5**	**Project Manager:**	**Angela Ockrassa Davis**
Project:	**FOIA Ex. 6 Farm**	**Project Number:**	**JR1801**

WORK ORDER MEMO: NCR 16332

REVIEWED

By Amanda Wroble at 3:34 pm, Nov 07, 2018

Reviewed By Date

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5 77 West Jackson Boulevard Chicago IL, 60604	Project: FOIA Exempt 6 Farm Project Number: JR1801 Project Manager: Joan Rogers	**Reported:** Dec-10-18 15:13

BOD, 5 day, SM 5210 B (modified)
US EPA Region 5 Chicago Regional Laboratory

S01 (1811002-01) **Matrix: Water** **Sampled: Nov-06-18 10:56** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	**2000**	J		2	mg/L	1	B18K026	Nov-08-18	Nov-08-18

S02 (1811002-02) **Matrix: Water** **Sampled: Nov-06-18 11:25** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	**49**	J		2	mg/L	1	B18K026	Nov-08-18	Nov-08-18

S03 (1811002-03) **Matrix: Water** **Sampled: Nov-06-18 11:45** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	**2500**	J		2	mg/L	1	B18K026	Nov-08-18	Nov-08-18

S04 (1811002-04) **Matrix: Water** **Sampled: Nov-06-18 12:08** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	**17**	J		2	mg/L	1	B18K026	Nov-08-18	Nov-08-18

S05 (1811002-05) **Matrix: Water** **Sampled: Nov-06-18 12:31** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	**640**	J		2	mg/L	1	B18K026	Nov-08-18	Nov-08-18

S06 (1811002-06) **Matrix: Water** **Sampled: Nov-06-18 12:38** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	**1600**	J		2	mg/L	1	B18K026	Nov-08-18	Nov-08-18

B01 (1811002-07) **Matrix: Water** **Sampled: Nov-06-18 12:50** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	**2**	J		2	mg/L	1	B18K026	Nov-08-18	Nov-08-18

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: FOIA E 6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	**Reported:**
Chicago IL, 60604	Project Manager: Joan Rogers	Dec-10-18 15:13

Notes and Definitions

J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Not Detected
NR	Not Reported
Q	QC limit Exceeded

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5 CHICAGO REGIONAL LABORATORY
536 SOUTH CLARK STREET (ML-10C)
CHICAGO, ILLINOIS 60605

ELECTRONIC LABORATORY DATA PACKAGE
FINAL LEVEL IV
COVER PAGE

LIMS Work order(s):	1811002
Analysis:	Solids, TSS
Primary Analyst:	Francis Awanya
Date:	12/18/2018
Data Reporting Qualtrax Workflow ID:	16838

Digital Signature of Primary Analyst:

Francis A Awanya Digitally signed by Francis A Awanya
Date: 2018.12.18 09:23:30 -06'00'

Digital Signature Agreement: By signing above the primary analyst understands and agrees that they will be held legally bound, obligated, and responsible for the use of their digital signature as they would be by using their hand-written signature.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CHICAGO REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: 12/18/2018

Subject: Review of Region 5 Data for FOIA Ex. 6 Farm

To: Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604

From: Francis Awanya, Chemist
US EPA Region 5 Chicago Regional Laboratory

The data transmitted under this cover memo successfully passed CRL's data review procedures as documented in the current Quality Management Plan and applicable Standard Operating Procedures. In accordance with the EPA QA/G-8 *Guidance on Environmental Data Verification and Data Validation* and the U.S. EPA Region 5 RMD QMP, CRL performs data verification on all the data generated internally. CRL does not perform data validation or quality assessment procedures.

This report was reviewed and the information provided herein accurately represents the analysis performed.

Francis A Awanya

Please contact the analyst with any technical report issues, Amanda Wroble at (312)-353-0375 for sample project concerns, and Sylvia Griffin at (312)-353-9073 with data transmittal questions. Thank you.

Attached are Results for: FOIA Ex. 6 (Personal) Farm

Analyses included in this report:

Solids, TSS

Report Name: 1811002 Solids, TSS FINAL Dec 18 18 0910

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: FOIA Ex 6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	**Reported:**
Chicago IL, 60604	Project Manager: Joan Rogers	Dec-18-18 09:10

Accredited Analyses included in this Report

ANAB ACCREDITED TESTING LABORATORY

Method: ***SM 2540 D in Water***
Analysis: ***Solids, TSS***

Analyte	Certifications
Total Suspended Solids	ISO/IEC 17025:2005

Analytes not listed above are not accredited by ANAB.

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

WORK ORDER **Printed: 11/7/2018 3:33:27PM**

1811002

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: FOIA Ex. 6 Farm **Project Number:** JR1801

Report To:

Joan Rogers
Water Division, US EPA Region 5

77 West Jackson Boulevard
Chicago, IL 60604

Phone: 312-886-2785
Fax: (312) 886-2001

Date Due: Dec-24-18 15:00 (47 day TAT)
Received By: Robert Snyder
Logged In By: Robert Snyder

Date Received: Nov-07-18 09:30
Date Logged In: Nov-07-18 13:56

Samples Received at:	1.6 °C
Sample tags/labels	Yes
Seals Intact	Yes
Received on ice	Yes
Paperwork Included	Yes

Work Order Comments:
pH paper used in SC=18D1901

Sample ID: 1811002-01 **Sampled:** Nov-06-18 10:56 **Matrix:** Water
Sample Name: S01 **Sample Location/Comments:** Weephole Discharge
Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 10:56	pH = 1
BOD	2	Nov-08-18 10:56	pH = 8
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 10:56	pH = 1
Solids, TDS	7	Nov-13-18 10:56	pH = 8
Solids, TSS	7	Nov-13-18 10:56	pH = 8
TKN DA	28	Dec-04-18 10:56	pH = 1
Total Phosphorus DA	28	Dec-04-18 10:56	pH = 1

Sample ID: 1811002-02 **Sampled:** Nov-06-18 11:25 **Matrix:** Water
Sample Name: S02 **Sample Location/Comments:** Confluence # 1
Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 11:25	pH = 1
BOD	2	Nov-08-18 11:25	pH = 8
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 11:25	pH = 1
Solids, TDS	7	Nov-13-18 11:25	pH = 8
Solids, TSS	7	Nov-13-18 11:25	pH = 8

1811002

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: FOIA Ex. 6 Farm **Project Number:** JR1801

Sample ID: 1811002-02 **Sampled:** Nov-06-18 11:25 **Matrix:** Water

Sample Name: S02 **Sample Location/Comments:** Confluence # 1

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
TKN DA	28	Dec-04-18 11:25	pH = 1
Total Phosphorus DA	28	Dec-04-18 11:25	pH = 1

Sample ID: 1811002-03 **Sampled:** Nov-06-18 11:45 **Matrix:** Water

Sample Name: S03 **Sample Location/Comments:** Silage Puddle (Front)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 11:45	pH = 3
BOD	2	Nov-08-18 11:45	pH = 7
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 11:45	pH = 3
Solids, TDS	7	Nov-13-18 11:45	pH = 7
Solids, TSS	7	Nov-13-18 11:45	pH = 7
TKN DA	28	Dec-04-18 11:45	pH = 3
Total Phosphorus DA	28	Dec-04-18 11:45	pH = 3

Sample ID: 1811002-04 **Sampled:** Nov-06-18 12:08 **Matrix:** Water

Sample Name: S04 **Sample Location/Comments:** Confluence # 2

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 12:08	pH = 1
BOD	2	Nov-08-18 12:08	pH = 8
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 12:08	pH = 1
Solids, TDS	7	Nov-13-18 12:08	pH = 8
Solids, TSS	7	Nov-13-18 12:08	pH = 8
TKN DA	28	Dec-04-18 12:08	pH = 1
Total Phosphorus DA	28	Dec-04-18 12:08	pH = 1

1811002

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: FOIA Ex. 6 Farm **Project Number:** JR1801

Sample ID: 1811002-05 **Sampled:** Nov-06-18 12:31 **Matrix:** Water

Sample Name: S05 **Sample Location/Comments:** Silage Bag Pathway

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 12:31	pH = 1
BOD	2	Nov-08-18 12:31	pH = 7
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 12:31	pH = 1
Solids, TDS	7	Nov-13-18 12:31	pH = 7
Solids, TSS	7	Nov-13-18 12:31	pH = 7
TKN DA	28	Dec-04-18 12:31	pH = 1
Total Phosphorus DA	28	Dec-04-18 12:31	pH = 1

Sample ID: 1811002-06 **Sampled:** Nov-06-18 12:38 **Matrix:** Water

Sample Name: S06 **Sample Location/Comments:** Off Young Stock Pen

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 12:38	pH = 1
BOD	2	Nov-08-18 12:38	pH = 8
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 12:38	pH = 1
Solids, TDS	7	Nov-13-18 12:38	pH = 8
Solids, TSS	7	Nov-13-18 12:38	pH = 8
TKN DA	28	Dec-04-18 12:38	pH = 1
Total Phosphorus DA	28	Dec-04-18 12:38	pH = 1

Sample ID: 1811002-07 **Sampled:** Nov-06-18 12:50 **Matrix:** Water

Sample Name: B01 **Sample Location/Comments:** FOIA Ex. 6

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 12:50	pH = 1
BOD	2	Nov-08-18 12:50	pH = 4
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 12:50	pH = 1
Solids, TDS	7	Nov-13-18 12:50	pH = 4
Solids, TSS	7	Nov-13-18 12:50	pH = 4
TKN DA	28	Dec-04-18 12:50	pH = 1
Total Phosphorus DA	28	Dec-04-18 12:50	pH = 1

1811002

US EPA Region 5 Chicago Regional Laboratory

Client:	**Water Division, US EPA Region 5**	**Project Manager:**	**Angela Ockrassa Davis**
Project:	FOIA Ex. 6 **Farm**	**Project Number:**	**JR1801**

WORK ORDER MEMO: NCR 16332

REVIEWED

By Amanda Wroble at 3:34 pm, Nov 07, 2018

Reviewed By Date

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5 77 West Jackson Boulevard Chicago IL, 60604	Project: FOIA Exempt 6 Farm Project Number: JR1801 Project Manager: Joan Rogers	**Reported:** Dec-18-18 09:10

Total Suspended Solids, SM 2540 D (modified)
US EPA Region 5 Chicago Regional Laboratory

S01 (1811002-01) **Matrix: Water** **Sampled: Nov-06-18 10:56** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	455			5	mg/L	1	B18K025	Nov-07-18	Nov-07-18

S02 (1811002-02) **Matrix: Water** **Sampled: Nov-06-18 11:25** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	4400			5	mg/L	1	B18K025	Nov-07-18	Nov-07-18

S03 (1811002-03) **Matrix: Water** **Sampled: Nov-06-18 11:45** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	448			5	mg/L	1	B18K025	Nov-07-18	Nov-07-18

S04 (1811002-04) **Matrix: Water** **Sampled: Nov-06-18 12:08** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	680			5	mg/L	1	B18K025	Nov-07-18	Nov-07-18

S05 (1811002-05) **Matrix: Water** **Sampled: Nov-06-18 12:31** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	460			5	mg/L	1	B18K025	Nov-07-18	Nov-07-18

S06 (1811002-06) **Matrix: Water** **Sampled: Nov-06-18 12:38** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	460			5	mg/L	1	B18K025	Nov-07-18	Nov-07-18

B01 (1811002-07) **Matrix: Water** **Sampled: Nov-06-18 12:50** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	U			5	mg/L	1	B18K025	Nov-07-18	Nov-07-18

Environmental Protection Agency Region 5

Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: FOIA Ex. 6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	**Reported:**
Chicago IL, 60604	Project Manager: Joan Rogers	Dec-18-18 09:10

Notes and Definitions

U	Not Detected
NR	Not Reported
Q	QC limit Exceeded

Nonconformance Report (NCR)

ID 16332
Current Step is Deputy Director Evaluation
Initiated by Snyder Robert
Submit for Evaluation by Snyder Robert on 11/7/2018 2:23:52 PM
Needs to be processed by (Persoon Carolyn)

Deputy Director Evaluation

NCR - DD Evaluation
The Deputy Director must read the report (below) and evaluate the non-conformance by completing the 2 fields (Left-handside is a drop down menu: Right-hand side are instructions) directly below.

NCR Evaluation (Required)	NCR Comment (Required)

CA - Simple CA Root Cause
State the incident's root cause (root cause analysis does not apply in this route)

Responsible Party

NCR - CA Responsible Party Group
To which group does the assigned CA party belong to?

NCR - Simple CA Recommendation Response, if any (DD)

NCR - Additional Action Request
Simple CA additional information or action request

CA Additional Action Request

NCR - Rejected by DD Comment

Short Title
CC and/or NCR short title
Underpreserved sample

NCR - Project Name and/or Work Order Number
MUST MATCH THE PROJECT NAME OR WO EXACTLY AS DOCUMENTED IN LIMS.
FOIA Ex. 6 (Personal Farm

NCR - Nonconformance Description
Include incident description, activity and note the associated work has stopped
Sample S03 arrived at CRL at a pH of 3. Preservation requirement for requested analyses is 2. Checkin proceeded on verbal authorization from DD. WO 1811002

CA - Incident Date
The date in which the incident (causing the finding) occurred
11/7/2018

NCR - CC Notification, if any
Description of client contact
see pdf

NCR - Simple CA Recommendation (Initiator)
n/a

NCR - CC Attachment
16333 CAFO sample is underpreserved.pdf

CA - Assigned to the CA

From: Snyder, Robert
To: Rogers, Joan; Cheryl Burdett
Cc: Ockrassa-Davis, Angela
Subject: CAFO sample is underpreserved
Date: Wednesday, November 07, 2018 2:23:00 PM

One of the samples from FOIA Ex. 6 (Personal Farm (S03) is underpreserved. The requirement is pH 2, this is at a pH of 3. Data from the analyses for ammonia, N-N, TKN and TP may be flagged as a result. Proceed?

Robert Snyder
Sample Custodian
USEPA Region 5 CRL
Tel: (312) 353-9083
Email: snyder.robert@epa.gov

Date: 11/15/2018

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CHICAGO REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Data Verification Checklist

Work Order: 1811002 **Project:** FOIA Ex. 6 Farm

Analysis: Solids, TSS **CRL SOP Used:** AIG018 Version #5

Electronic Pathway(s):

I:\Projects (New File Structure)\FOIA Ex. 6 Farm\1. A &I\Fawanya\Gravimetric\TSS\1811002\

File Name(s):

B18K025.pdf

General Information

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
1	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	YES	(YES) / NO / NA
2	Was customer contact communication included?	YES	(YES) / NO / NA
3	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	YES	(YES) / NO / NA
4	Were all samples prepared and analyzed within holding times?	YES	(YES) / NO / NA

Sample Results

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
5	Were calculations checked?	YES	(YES) / NO / NA
6	Were all analyte results checked?	YES	(YES) / NO / NA
7	Were all results for soil and sediment samples reported on a dry weight basis?	NA	YES / NO / (NA)
8	Were % moisture (or solids) reported for all soil and sediment samples?	NA	YES / NO / (NA)
9	Other than those results < RL, were all other raw values bracketed by calibration standards?	NA	YES / NO / (NA)
10	Are the RLs for each method analyte included in the laboratory data package?	YES	(YES) / NO / NA
11	Are MDLs/RLs adjusted for dilutions?	NA	YES / NO / (NA)
12	Were the raw data (for example, chromatograms, spectral data) reviewed?	YES	(YES) / NO / NA
13	Were data associated with manual integrations flagged on the raw data?	NA	YES / NO / (NA)

Standards

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
14	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources as specified in the analytical SOP?	YES	(YES) / NO / NA
15	Were standard/reagent preparations checked (preparation date, expiration date, parent standard IDs, etc.), if applicable?	YES	(YES) / NO / NA

Batch Quality Control

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
16	Were appropriate type(s) of blanks analyzed?	YES	(YES) / NO / NA

Batch Quality Control

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
17	Were blanks analyzed at the appropriate frequency?	YES	YES / NO / NA
18	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	YES	YES / NO / NA
19	Were blank concentrations <= MDL or RL, as applicable in the analytical SOP?	YES	YES / NO / NA
20	Was each LCS/SRM taken through the entire analytical procedure, including prep and cleanup steps?	YES	YES / NO / NA
21	Were LCSs/SRMs analyzed at the required frequency?	YES	YES / NO / NA
22	Were LCS/SRM %Rs within the laboratory QC limits or other acceptance criteria?	YES	YES / NO / NA
23	Were the project/method specified analytes included in the MS?	NA	YES / NO / NA
24	Were MS analyzed at the appropriate frequency?	NA	YES / NO / NA
25	Were MS %Rs within the laboratory QC limits?	NA	YES / NO / NA
26	Were appropriate analytical duplicates analyzed for each matrix?	YES	YES / NO / NA
27	Were analytical duplicates analyzed at the appropriate frequency?	YES	YES / NO / NA
28	Were RPDs or relative standard deviations within the laboratory QC limits or other acceptance criteria?	YES	YES / NO / NA
29	Were RLs analyzed at the appropriate frequency?	NA	YES / NO / NA
30	Were RL recoveries within the laboratory QC limits?	NA	YES / NO / NA

Calibration

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
31	Were calibration correlation coefficient or other acceptance criteria met?	YES	YES / NO / NA
32	Was the number of calibration standards recommended in the method used for all analytes?	NA	YES / NO / NA
33	Were all points generated between the lowest and highest standard used to calculate the curve?	NA	YES / NO / NA
34	Are calibration data available for all instruments used?	YES	YES / NO / NA

Calibration Verification

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
35	Was the absolute value of the analyte concentration in the ICB/CCB <= MDL or RL, as applicable in the analytical SOP?	NA	YES / NO / NA
36	Was the calibration curve verified for each analyte?	NA	YES / NO / NA
37	Has the calibration curve been verified using an appropriate second source standard?	NA	YES / NO / NA
38	Were ICV/CCV analyzed at the method-required frequency?	NA	YES / NO / NA
39	Were ICV/CCV %R within the laboratory QC limits?	NA	YES / NO / NA

Quality Control

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
40	QC limits in LIMS checked against the SOP?	YES	YES / NO / NA
41	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	YES	YES / NO / NA

Quality Control

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
42	Were QC charts checked if a QC audit, excluding matrix QC (MS or DUP), was out of limit?	NA	YES / NO / NA

Supporting Data

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
43	Were support equipment data (balance verification, data logs, logbook entries, etc.) included in data package?	YES	YES / NO / NA
44	Were approved spreadsheet(s) used?	YES	YES / NO / NA

Document Verification

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
45	Is the MDL or RL study up-to-date for each reported analyte?	YES	YES / NO / NA
46	Is documentation of the analyst's capability up-to-date and on file?	YES	YES / NO / NA
47	Are the procedures for compound/analyte identification documented?	YES	YES / NO / NA
48	Are laboratory SOPs current and on file for the method performed?	YES	YES / NO / NA
49	Were data evaluated against project QAPP or Sample Plan and documented in case narrative?	YES	YES / NO / NA

Accreditation

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
50	ANAB logo used appropriately?	YES	YES / NO / NA

Signature and Date: _____ _____

Total Suspended Solids (TSS) by SM2540D/ EPA 160.2

Analyst: Francis Awenya | Preparation Date: 11/8/2018 | Batch ID: B18K025

Analyte: Total Suspended Solids | Units: mg/L

Calculation: TSS (mg/L) = (Weight of Dry Sample (g) *1000000)/Volume of Sample (mL) | Note: Weight of Dry Sample is the last dry weight recorded.

		Oven (105°C)	Date/Time IN	Date/Time OUT
Oven Number:	Oven #10	Dry Cycle #1	11/8/2018; 1:00pm	11/8/2018; 2:00pm
		Dry Cycle #2	11/8/2018; 3:30pm	11/8/2018; 4:30pm
Balance Number:	Balance #17	Dry Cycle #3		

A	B	C	D	E	F	G	H	I	J	K	L	M	N
Filter ID	Sample ID	Client ID	Sample Type	Clean Filter Weight (g)	Sample Volume (mL)	Dry Filter and Sample 1st Weighing (g)	Dry Filter and Sample 2nd Weighing (g)	Dry Filter and Sample 3rd Weighing (g)	Dry Filter Residue Check >0.001 & <0.200 g	Value (mg/L, TSS)	Unadj. (mg/L, TSS)	Dilution Factor	Comments
GZ3Z1	1811002-01	101	Sample	0.1230	20.0	0.1321	0.1321		0.0091	455.0000	455.0000	1	
GZ3ZL	1811002-02	102	Sample	0.1205	5.0	0.1426	0.1425		0.0220	4400.0000	4400.0000	1	
GZ3ZM	1811002-03	103	Sample	0.1205	50.0	0.1429	0.1429		0.0224	448.0000	448.0000	1	
GZ3ZP	1811002-04	104	Sample	0.1168	25.0	0.1339	0.1338		0.0170	680.0000	680.0000	1	
GZ38W	1811002-05	105	Sample	0.1174	25.0	0.1289	0.1289		0.0115	460.0000	460.0000	1	
GZ3ZU	1811002-06	106	Sample	0.1230	25.0	0.1345	0.1345		0.0115	460.0000	460.0000	1	
GZ38X	1811002-07	107	Sample	0.1157	100.0	0.1156	0.1155		-0.0002	-2.0000	-2.0000	1	
GZ3ZC	B18K025-BLK1		Blank	0.1202	100.0	0.1199	0.1200		-0.0002	-2.0000	-2.0000	1	
GZ3ZJ	B18K025-DUP1	1811002-01	Duplicate	0.1212	20.0	0.1305	0.1305		0.0093	465.0000	465.0000	1	
GZ3ZD	B18K025-SRM1		Reference	0.1176	100.0	0.1185	0.1194		0.0018	18.0000	18.0000	1	LIMS ID #18F1521
							0.1425						

NOTE: (1) Environmental Express DoubleWeigh Filters for TSS – F93447MM-X, 47mm; Lot #: 600018-8134-R1; LIMS ID: 18E1722. All the clean filter initial weights were pre-weighed by the manufacturer.

Reviewed by: Colin Brastin 6/9/2014 | Approved by: Angela Odimasse 6/9/2014

GZ3ZM
FAA 11/15/2018

FAA 11/8/2018

Balance Check

BALANCE ID: #17
DATE: 11/8/2017
ANALYST: Francis Awanya
WEIGHT SET ID: TROEMNER S/N: 4000017548
INITIAL & DATE: FAA 11/8/2018

Standard Weight (g)	Actual Weight (g)	Deviation (g) [Standard Weight - Actual
0.1000	0.1000	0.0000
0.2000	0.2000	0.0000
0.5000	0.5000	0.0000
1.0000	1.0000	0.0000
2.0000	2.0000	0.0000
5.0000	5.0000	0.0000
10.0000	10.0000	0.0000
20.0000	19.9999	0.0001
50.0000	50.0000	0.0000
100.0000	100.0000	0.0000

Balance Tolerance

*For weights 50 g - 100 g, deviation should be ± 0.0006 g
*For weights 20 g and under, deviation should be ± 0.0001 g

LABORATORY NOTEBOOK

Thermo Scientific Oven

Heratherm OMS100

S.#: 11867868

OVEN #10

ROOM: 1033

Received Date: Unknown

In-service Date: 8/27/2015

OVEN #10 (TEMPERATURE °C)

30
PROJECT _____ Notebook No. _____
Continued from Page _____

Date	Time	Oven Setting	Oven Reading	ELPRO Reading	Analyst Initial	Comments
9/17/18	4:35pm	105°C	105°C	NA	MF	F180902
9/18/18	12:31pm	105°C	105°C	NA	MF	Soil Dry
9/24/18	4:33 pm	105°C	105°C	NA	MF	E180903
9/25/18	2:42 pm	105°C	105°C	NA	MF	Soil Drying
9/25/18	3:25pm	105°C	105°C	NA	MF	Soil Drying
9/26/18	2:32pm	105°C	105°C	NA	MF	
10/11/18	3:50pm	105°C	105°C	NA	MF	Soil Drying
10/12/18	10:02am	105°C	105°C	NA	MF	E181002
10/26/18	10:04 AM	105°C	105°C		MF	E181004 TSS
10/29/2018	11:15 AM	104°C	104°C	104.2°C	FAA	B18J036
10/29/2018	12:15 AM	104°C	104°C	104.5°C	FAA	"
10/29/2018	1:23 PM	104°C	104°C	104.6°C	FAA	B18J036
10/29/2018	2:23 PM	~~104°C~~ 104°C FAA 10/29/18	104°C	104.5°C	FAA	"
11/8/2018	1:00 PM (IN)	104°C	104°C	104.7°C	FAA	B18K025 TSS
11/8/2018	2:00 PM (OUT)	104°C	104°C	104.7°C		
11/8/2018	3:20 PM (IN)	104°C	104°C	104.3°C	~~FAA~~	B18K025
11/8/2018	4:20 PM (OUT)	104°C	104°C	104.4°C	FAA	B18K025

Continued on Page

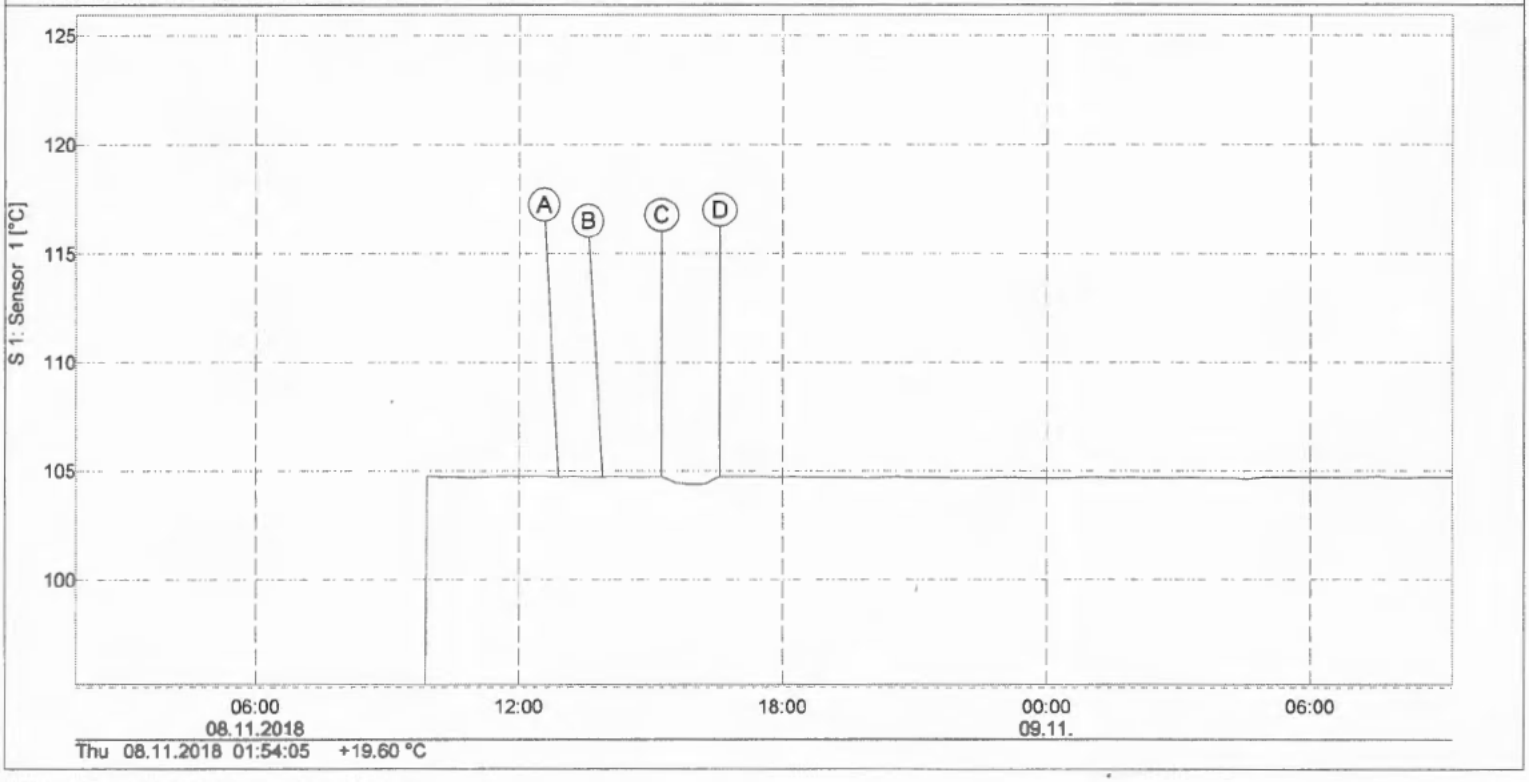
Read and Understood By

Signed _____ Date _____ Signed _____ Date _____

ECOLOG-NET LA8 ID:303801 - elproLOG ANALYZE QLS 3.61.02
Date of Reading: 14.11.2018 16:15:49
Log Interval: 20 min
Module Tag: S1=Oven 10, S2=Oven 9, S3=Oven 11, S4=Oven 12, S5 - S8=Open
Data Description:
C:\Users\fawanya\Documents\303801_S1=Oven 10, S2=Oven -20181114-01.MDF

Work Order Number 1811002
Analysis: Solids, TSS
1033 - Oven 10, Sensor S4
Analyst: FAA

	_____A to B_____	_____C to D_____
Start Date and time:	A) S1: 08.11.2018 12:54:05	C) S1: 08.11.2018 15:14:05
End Date and Time:	B) S1: 08.11.2018 13:54:05	D) S1: 08.11.2018 16:34:05



FAWANYA, 14.11.2018 / Current Line Chart

ECOLOG-NET LA8 ID:303801 - elproLOG ANALYZE QLS 3.61.02
Date of Reading: 14.11.2018 16:15:49
Log Interval: 20 min
Module Tag: S1=Oven 10, S2=Oven 9, S3=Oven 11, S4=Oven 12, S5 - S8=Open
Data Description:
C:\Users\fawanya\Documents\303801_S1=Oven 10, S2=Oven -20181114-01.MDF

Work Order Number 1811002
Analysis: Solids, TSS
1033 - Oven 10, Sensor S4
Analyst: FAA

	A to B	C to D
Start Date and time:	A) S1: 08.11.2018 12:54:05	C) S1: 08.11.2018 15:14:05
End Date and Time:	B) S1: 08.11.2018 13:54:05	D) S1: 08.11.2018 16:34:05

	Date	Time	Sensor 1	Sensor 2	Sensor 3	Sensor 4	Info
557	08.11.2018	12:34:05	+104.74 °C	+21.25 °C	+21.1 °C	+104.34 °C	
558	08.11.2018	12:54:05	+104.71 °C	+21.25 °C	+21.1 °C	+104.30 °C	
559	08.11.2018	13:14:05	+104.74 °C	+21.35 °C	+21.3 °C	+104.30 °C	
560	08.11.2018	13:34:05	+104.71 °C	+21.38 °C	+21.3 °C	+104.34 °C	
561	08.11.2018	13:54:05	+104.71 °C	+21.45 °C	+21.3 °C	+104.34 °C	
562	08.11.2018	14:14:05	+104.74 °C	+21.48 °C	+21.5 °C	+104.30 °C	
563	08.11.2018	14:34:05	+104.71 °C	+21.48 °C	+21.5 °C	+104.91 °C	
564	08.11.2018	14:54:05	+104.71 °C	+21.52 °C	+21.5 °C	+104.57 °C	
565	08.11.2018	15:14:05	+104.74 °C	+21.55 °C	+21.6 °C	+104.64 °C	
566	08.11.2018	15:34:05	+104.44 °C	+21.58 °C	+21.6 °C	+104.61 °C	
567	08.11.2018	15:54:05	+104.40 °C	+21.62 °C	+21.6 °C	+104.57 °C	
568	08.11.2018	16:14:05	+104.40 °C	+21.62 °C	+21.8 °C	+104.54 °C	
569	08.11.2018	16:34:05	+104.74 °C	+21.65 °C	+21.8 °C	+104.47 °C	

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5 CHICAGO REGIONAL LABORATORY
536 SOUTH CLARK STREET (ML-10C)
CHICAGO, ILLINOIS 60605

ELECTRONIC LABORATORY DATA PACKAGE
FINAL LEVEL IV
COVER PAGE

LIMS Work order(s):	1811002
Analysis:	Solids, TDS
Primary Analyst:	Francis Awanya
Date:	12/18/2018
Data Reporting Qualtrax Workflow ID:	16838

Digital Signature of Primary Analyst:

Francis A Awanya Digitally signed by Francis A Awanya
Date: 2018.12.18 09:23:01 -06'00'

Digital Signature Agreement: By signing above the primary analyst understands and agrees that they will be held legally bound, obligated, and responsible for the use of their digital signature as they would be by using their hand-written signature.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CHICAGO REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: 12/18/2018

Subject: **Review of Region 5 Data for** FOIA Ex. 6 **Farm**

To: **Water Division, US EPA Region 5**
77 West Jackson Boulevard
Chicago, IL 60604

From: **Francis Awanya, Chemist**
US EPA Region 5 Chicago Regional Laboratory

The data transmitted under this cover memo successfully passed CRL's data review procedures as documented in the current Quality Management Plan and applicable Standard Operating Procedures. In accordance with the EPA QA/G-8 *Guidance on Environmental Data Verification and Data Validation* and the U.S. EPA Region 5 RMD QMP, CRL performs data verification on all the data generated internally. CRL does not perform data validation or quality assessment procedures.

This report was reviewed and the information provided herein accurately represents the analysis performed.

Francis A Awanya

Please contact the analyst with any technical report issues, Amanda Wroble at (312)-353-0375 for sample project concerns, and Sylvia Griffin at (312)-353-9073 with data transmittal questions. Thank you.

Attached are Results for: FOIA Ex. 6 (Personal **Farm**

Analyses included in this report:

Solids, TDS

Report Name: 1811002 Solids, TDS FINAL Dec 18 18 0903

Environmental Protection Agency Region 5

Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5 77 West Jackson Boulevard Chicago IL, 60604	Project: FOIA Exempt 6 Farm Project Number: JR1801 Project Manager: Joan Rogers	**Reported:** Dec-18-18 09:03

Accredited Analyses included in this Report

ANAB ACCREDITED TESTING LABORATORY

Method: ***SM 2540 C in Water***
Analysis: ***Solids, TDS***

Analyte	**Certifications**
Total Dissolved Solids	ISO/IEC 17025:2005

Analytes not listed above are not accredited by ANAB.

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: FOIA E 6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	Reported:
Chicago IL, 60604	Project Manager: Joan Rogers	Dec-18-18 09:03

ANALYSIS CASE NARRATIVE

Analysis List
Solids, TDS

Analyst: Francis Awanya
Phone #: (312)886-3682

General Information

Samples analyzed:

Sample	Analysis List
1811002-01	Solids, TDS
1811002-02	Solids, TDS
1811002-03RE1	Solids, TDS
1811002-04	Solids, TDS
1811002-05	Solids, TDS
1811002-06	Solids, TDS
1811002-07	Solids, TDS

Holding times:
All holding times were met.

Sample Analysis and Results

The samples were analyzed using CRL SOP AIG017, Version #5. The samples were stored in the refrigerator at all times, except when in use. Sample 1811002-03 (Field Sample Number S03) was rebatched and assigned laboratory sample number 1811002-03RE1. This sample required additional drying cycle to obtain constant weight. The data reported herein meets any requirements referenced in the aforementioned SOP and Sampling QAPP titled ""GENERAL FIELD SAMPLING PLAN FOR AFO INSPECTIONS FY 2018", submitted for FY 2018 and archived in the CRL share drive as "FY 2019 General Field Sampling Plan 11052018.wpd".

SOP Based on:
Method List
SM 2540 C

Quality Control

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: FOIA Ex. 6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	**Reported:**
Chicago IL, 60604	Project Manager: Joan Rogers	Dec-18-18 09:03

All quality control audits were within CRL limits or did not result in qualification of the data except for any listed below.

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

WORK ORDER **Printed: 11/7/2018 3:33:27PM**

1811002

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: FOIA Ex. 6 Farm **Project Number:** JR1801

Report To:

Joan Rogers
Water Division, US EPA Region 5

77 West Jackson Boulevard
Chicago, IL 60604

Phone: 312-886-2785
Fax: (312) 886-2001

Date Due: Dec-24-18 15:00 (47 day TAT)
Received By: Robert Snyder
Logged In By: Robert Snyder

Date Received: Nov-07-18 09:30
Date Logged In: Nov-07-18 13:56

Samples Received at:	1.6 °C
Sample tags/labels	Yes
Seals Intact	Yes
Received on ice	Yes
Paperwork Included	Yes

Work Order Comments:
pH paper used in SC=18D1901

Sample ID: 1811002-01 **Sampled:** Nov-06-18 10:56 **Matrix:** Water

Sample Name: S01 **Sample Location/Comments:** Weephole Discharge

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 10:56	pH = 1
BOD	2	Nov-08-18 10:56	pH = 8
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 10:56	pH = 1
Solids, TDS	7	Nov-13-18 10:56	pH = 8
Solids, TSS	7	Nov-13-18 10:56	pH = 8
TKN DA	28	Dec-04-18 10:56	pH = 1
Total Phosphorus DA	28	Dec-04-18 10:56	pH = 1

Sample ID: 1811002-02 **Sampled:** Nov-06-18 11:25 **Matrix:** Water

Sample Name: S02 **Sample Location/Comments:** Confluence # 1

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 11:25	pH = 1
BOD	2	Nov-08-18 11:25	pH = 8
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 11:25	pH = 1
Solids, TDS	7	Nov-13-18 11:25	pH = 8
Solids, TSS	7	Nov-13-18 11:25	pH = 8

1811002

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: FOIA Ex. 6 Farm **Project Number:** JR1801

Sample ID: 1811002-02 **Sampled:** Nov-06-18 11:25 **Matrix:** Water

Sample Name: S02 **Sample Location/Comments:** Confluence # 1

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
TKN DA	28	Dec-04-18 11:25	pH = 1
Total Phosphorus DA	28	Dec-04-18 11:25	pH = 1

Sample ID: 1811002-03 **Sampled:** Nov-06-18 11:45 **Matrix:** Water

Sample Name: S03 **Sample Location/Comments:** Silage Puddle (Front)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 11:45	pH = 3
BOD	2	Nov-08-18 11:45	pH = 7
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 11:45	pH = 3
Solids, TDS	7	Nov-13-18 11:45	pH = 7
Solids, TSS	7	Nov-13-18 11:45	pH = 7
TKN DA	28	Dec-04-18 11:45	pH = 3
Total Phosphorus DA	28	Dec-04-18 11:45	pH = 3

Sample ID: 1811002-04 **Sampled:** Nov-06-18 12:08 **Matrix:** Water

Sample Name: S04 **Sample Location/Comments:** Confluence # 2

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 12:08	pH = 1
BOD	2	Nov-08-18 12:08	pH = 8
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 12:08	pH = 1
Solids, TDS	7	Nov-13-18 12:08	pH = 8
Solids, TSS	7	Nov-13-18 12:08	pH = 8
TKN DA	28	Dec-04-18 12:08	pH = 1
Total Phosphorus DA	28	Dec-04-18 12:08	pH = 1

1811002

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: FOIA Ex. 6 Farm **Project Number:** JR1801

Sample ID: 1811002-05 **Sampled:** Nov-06-18 12:31 **Matrix:** Water

Sample Name: S05 **Sample Location/Comments:** Silage Bag Pathway

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 12:31	pH = 1
BOD	2	Nov-08-18 12:31	pH = 7
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 12:31	pH = 1
Solids, TDS	7	Nov-13-18 12:31	pH = 7
Solids, TSS	7	Nov-13-18 12:31	pH = 7
TKN DA	28	Dec-04-18 12:31	pH = 1
Total Phosphorus DA	28	Dec-04-18 12:31	pH = 1

Sample ID: 1811002-06 **Sampled:** Nov-06-18 12:38 **Matrix:** Water

Sample Name: S06 **Sample Location/Comments:** Off Young Stock Pen

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 12:38	pH = 1
BOD	2	Nov-08-18 12:38	pH = 8
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 12:38	pH = 1
Solids, TDS	7	Nov-13-18 12:38	pH = 8
Solids, TSS	7	Nov-13-18 12:38	pH = 8
TKN DA	28	Dec-04-18 12:38	pH = 1
Total Phosphorus DA	28	Dec-04-18 12:38	pH = 1

Sample ID: 1811002-07 **Sampled:** Nov-06-18 12:50 **Matrix:** Water

Sample Name: B01 **Sample Location/Comments:** FOIA Ex. 6

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Dec-04-18 12:50	pH = 1
BOD	2	Nov-08-18 12:50	pH = 4
Nitrate-Nitrite N DA, Enzymatic reduction	28	Dec-04-18 12:50	pH = 1
Solids, TDS	7	Nov-13-18 12:50	pH = 4
Solids, TSS	7	Nov-13-18 12:50	pH = 4
TKN DA	28	Dec-04-18 12:50	pH = 1
Total Phosphorus DA	28	Dec-04-18 12:50	pH = 1

1811002

US EPA Region 5 Chicago Regional Laboratory

Client:	**Water Division, US EPA Region 5**	**Project Manager:**	**Angela Ockrassa Davis**
Project:	FOIA Ex. 6 **Farm**	**Project Number:**	**JR1801**

WORK ORDER MEMO: NCR 16332

REVIEWED

By Amanda Wroble at 3:34 pm, Nov 07, 2018

Reviewed By Date

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: FOIA Ex. 6 Farm	
77 West Jackson Boulevard	Project Number: JR1801	**Reported:**
Chicago IL, 60604	Project Manager: Joan Rogers	Dec-18-18 09:03

Dissolved Solids, SM 2540C (modified)
US EPA Region 5 Chicago Regional Laboratory

S01 (1811002-01) **Matrix: Water** **Sampled: Nov-06-18 10:56** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	**2470**			20.0	mg/L	1	B18K024	Nov-07-18	Nov-07-18

S02 (1811002-02) **Matrix: Water** **Sampled: Nov-06-18 11:25** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	**600**			20.0	mg/L	1	B18K024	Nov-07-18	Nov-07-18

S04 (1811002-04) **Matrix: Water** **Sampled: Nov-06-18 12:08** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	**1120**			20.0	mg/L	1	B18K024	Nov-07-18	Nov-07-18

S05 (1811002-05) **Matrix: Water** **Sampled: Nov-06-18 12:31** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	**855**			20.0	mg/L	1	B18K024	Nov-07-18	Nov-07-18

S06 (1811002-06) **Matrix: Water** **Sampled: Nov-06-18 12:38** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	**2600**			20.0	mg/L	1	B18K024	Nov-07-18	Nov-07-18

B01 (1811002-07) **Matrix: Water** **Sampled: Nov-06-18 12:50** **Received: Nov-07-18 09:30**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	U			20.0	mg/L	1	B18K024	Nov-07-18	Nov-07-18

Environmental Protection Agency Region 5

Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5 77 West Jackson Boulevard Chicago IL, 60604	Project: FOIA Ex. 6 Farm Project Number: JR1801 Project Manager: Joan Rogers	**Reported:** Dec-18-18 09:03

Notes and Definitions

U	Not Detected
NR	Not Reported
Q	QC limit Exceeded

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Quality Control Summary

Date: 12/18/2018 **Analyst:** Francis Awanya

Project: FOIA Ex 6 Farm

Analyte: Total Dissolved Solids

Analysis: Solids, TDS

QC Sample Name	Result	Units	Flags / Qualifiers	MDL	Reporting Limit	Spike Level	Source Result	%REC	%REC Limits	% RPD	% RPD Limit
B18K024-BLK1	U	mg/L		14.0	20.0						
B18K024-DUP1 Source: 1811002-01	2590	mg/L		14.0	20.0		2470			5	10
B18K024-SRM1	300	mg/L				296.0		101%	84.5-110		

Notes and Definitions

U	Not Detected
NR	Not Reported
Q	QC limit Exceeded

Francis Awanya, Chemist

Report Name: 1811002 Solids, TDS FINAL Dec 18 18 0907

Nonconformance Report (NCR)

ID 16332
Current Step is Deputy Director Evaluation
Initiated by Snyder Robert
Submit for Evaluation by Snyder Robert on 11/7/2018 2:23:52 PM
Needs to be processed by (Persoon Carolyn)

Deputy Director Evaluation

NCR - DD Evaluation
The Deputy Director must read the report (below) and evaluate the non-conformance by completing the 2 fields (Left-handside is a drop down menu: Right-hand side are instructions) directly below.

NCR Evaluation (Required)	NCR Comment (Required)

CA - Simple CA Root Cause
State the incident's root cause (root cause analysis does not apply in this route)

Responsible Party

NCR - CA Responsible Party Group
To which group does the assigned CA party belong to?

NCR - Simple CA Recommendation Response, if any (DD)

NCR - Additional Action Request
Simple CA additional information or action request

CA Additional Action Request

NCR - Rejected by DD Comment

Short Title
CC and/or NCR short title
Underpreserved sample

NCR - Project Name and/or Work Order Number
MUST MATCH THE PROJECT NAME OR WO EXACTLY AS DOCUMENTED IN LIMS.
FOIA Ex. 6 (Personal [redacted] Farm

NCR - Nonconformance Description
Include incident description, activity and note the associated work has stopped
Sample S03 arrived at CRL at a pH of 3. Preservation requirement for requested analyses is 2. Checkin proceeded on verbal authorization from DD. WO 1811002

CA - Incident Date
The date in which the incident (causing the finding) occurred
11/7/2018

NCR - CC Notification, if any
Description of client contact
see pdf

NCR - Simple CA Recommendation (Initiator)
n/a

NCR - CC Attachment
16333 CAFO sample is underpreserved.pdf

CA - Assigned to the CA

From: Snyder, Robert
To: Rogers, Joan; Cheryl Burdett
Cc: Ockrassa-Davis, Angela
Subject: CAFO sample is underpreserved
Date: Wednesday, November 07, 2018 2:23:00 PM

One of the samples from FOIA Ex. 6 Farm (S03) is underpreserved. The requirement is pH 2, this is at a pH of 3. Data from the analyses for ammonia, N-N, TKN and TP may be flagged as a result. Proceed?

Robert Snyder
Sample Custodian
USEPA Region 5 CRL
Tel: (312) 353-9083
Email: snyder.robert@epa.gov

Date: 11/15/2018

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CHICAGO REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Data Verification Checklist

Work Order: 1811002 **Project:** FOIA Ex. 6 Farm

Analysis: Solids, TDS **CRL SOP Used:** AIG017 Version #5

Electronic Pathway(s):

I:\Projects (New File Structure)\FOIA Ex. 6 Farm\1. A&I\Fawanya\Gravimetric\TDS\1811002\

File Name(s):

B18K024.pdf B18K029.pdf

General Information

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
1	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	YES	(YES) / NO / NA
2	Was customer contact communication included?	YES	(YES) / NO / NA
3	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	YES	(YES) / NO / NA
4	Were all samples prepared and analyzed within holding times?	YES	(YES) / NO / NA

Sample Results

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
5	Were calculations checked?	YES	(YES) / NO / NA
6	Were all analyte results checked?	YES	(YES) / NO / NA
7	Were all results for soil and sediment samples reported on a dry weight basis?	NA	YES / NO / (NA)
8	Were % moisture (or solids) reported for all soil and sediment samples?	NA	YES / NO / (NA)
9	Other than those results < RL, were all other raw values bracketed by calibration standards?	NA	YES / NO / (NA)
10	Are the RLs for each method analyte included in the laboratory data package?	YES	(YES) / NO / NA
11	Are MDLs/RLs adjusted for dilutions?	NA	YES / NO / (NA)
12	Were the raw data (for example, chromatograms, spectral data) reviewed?	YES	(YES) / NO / NA
13	Were data associated with manual integrations flagged on the raw data?	NA	YES / NO / (NA)

Standards

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
14	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources as specified in the analytical SOP?	YES	(YES) / NO / NA
15	Were standard/reagent preparations checked (preparation date, expiration date, parent standard IDs, etc.), if applicable?	YES	(YES) / NO / NA

Batch Quality Control

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
16	Were appropriate type(s) of blanks analyzed?	YES	(YES) / NO / NA

Quality Control

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
42	Were QC charts checked if a QC audit, excluding matrix QC (MS or DUP), was out of limit?	NA	YES / NO / (NA)

Supporting Data

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
43	Were support equipment data (balance verification, data logs, logbook entries, etc.) included in data package?	YES	(YES) / NO / NA
44	Were approved spreadsheet(s) used?	YES	(YES) / NO / NA

Document Verification

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
45	Is the MDL or RL study up-to-date for each reported analyte?	YES	(YES) / NO / NA
46	Is documentation of the analyst's capability up-to-date and on file?	YES	(YES) / NO / NA
47	Are the procedures for compound/analyte identification documented?	YES	(YES) / NO / NA
48	Are laboratory SOPs current and on file for the method performed?	YES	(YES) / NO / NA
49	Were data evaluated against project QAPP or Sample Plan and documented in case narrative?	YES	(YES) / NO / NA

Accreditation

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
50	ANAB logo used appropriately?	YES	(YES) / NO / NA

Signature and Date: _____ _____

Total Dissolved Solids (TDS) by SM2540C/EPA 160.1

Analyst: Francis Awanyo	Preparation Date: 11/8/2018	Batch ID:	B18K024
Analyte: Total Dissolved Solids	Units: mg/L		

Calculation: TDS (mg/L) = (Weight of Dry Sample (g) *1000000)/Volume of Sample (mL) Note: Weight of Dry Sample is the last dry weight recorded.

		105°C Oven #12	180°C Oven	Date/Time IN	Date/ Time OUT	180°C Oven	Date/Time IN	Date/ Time OUT
Oven Number:	Oven #12	Overnight from	Dry Cycle #1:	11/8/2018; 7:20am	11/8/2018; 6:20pm	Dry Cycle #4:		
		11/08/2018	Dry Cycle #2:	11/8/2018; 11:00am	11/8/2018; 12:00pm	Dry Cycle #5:		
Balance Number:	Balance #17	to 11/09/2018	Dry Cycle #3:	11/8/2018; 2:22pm	11/8/2018; 3:22pm	Dry Cycle #6:		

A	B	C	D	E	F	G	H	I	J	K	L	M	O
Crucible ID	Sample ID	Client ID	Sample Type	Crucible Tare Weight (g)	Sample Volume (mL)	Dry Crucible & Sample 1st Weighing (g)	Dry Crucible & Sample 2nd Weighing (g)	Dry Crucible & Sample 3rd Weighing (g)	Dry Residue Weight OK > 0.010 & < 0.250 (g)	Value (mg/L TDS)	Unadjusted (mg/L TDS)	Dilution Factor	Comments
A1	1811002-01	[illegible]	Sample	58.1109	15.0	58.1485	58.1490	58.1479	0.0370	2466.6667	2466.6667	1	
A2	1811002-02	[illegible]	Sample	59.9070	5.0	59.9101	59.9100		0.0030	600.0000	600.0000	1	
A3	1811002-03	[illegible]	Sample	56.9731	40.0	56.0715	56.0660	56.0656	0.0937	2342.5000	2342.5000	1	Additional drying needed FAA 11/9/18
A4	1811002-04	[illegible]	Sample	61.1470	25.0	61.1750	61.1749		0.0279	1116.0000	1116.0000	1	
A5	1811002-05	[illegible]	Sample	57.7668	20.0	57.8063	57.8059		0.0171	855.0000	855.0000	1	
A6	1811002-06	[illegible]	Sample	58.4544	20.0	58.4879	58.4866	58.4863	0.0519	2595.0000	2595.0000	1	
A7	1811002-07	[illegible]	Sample	54.4283	50.0	54.4283	54.4283		-0.0002	-4.0000	-4.0000	1	
Blank	B18K024-BLK1		Blank	58.6714	50.0	58.6714	58.6715		0.0001	2.0000	2.0000	1	
A21	B18K024-DUP1	[illegible]	Duplicate	62.9186	15.0	62.9584	62.9574	62.9574	0.0388	2586.6667	2586.6667	1	
Ref	B18K024-SRM1		Reference	51.0665	50.0	51.0815	51.0815		0.0150	300.0000	300.0000	1	LIMS ID #17H0907

NOTE: (1) Environmental Express ProWeight Filters – P03447MM-X, Lot #: 600018-8134-R1; LIMS ID: 18E1722.

Reviewed by: Colin Snellin 8/8/2014 Approved by: Angela Ockrassa 8/8/2014

FAA 11/9/2018

Total Dissolved Solids (TDS) by SM2540C/EPA 160.1

Analyst: Laurence Wong	Preparation Date: 7/21/2015	Batch ID:	B15K029
Analyte: Total Dissolved Solids	Units: mg/L		

Calculation: "TDS (mg/L) = (Weight of Dry Sample (g) *1000000)/Volume of Sample (mL) Note: Weight of Dry Sample is the last dry weight recorded.

		180°C Oven	Date/Time IN	Date/ Time OUT	180°C Oven	Date/Time IN	Date/ Time OUT
Oven Number:	Oven #2	Dry Cycle #1:	11/9/2018; 7:20am	11/9/2018; 6:20pm	Dry Cycle #4:	11/13/2018; 8:53am	11/13/2018; 10:53am
		Dry Cycle #2:	11/9/2018; 11:00am	11/9/2018; 12:00pm	Dry Cycle #5:	11/13/2018; 1:15pm	11/13/2018; 2:15pm
Balance Number:	...enter Balance Number	Dry Cycle #3:	11/9/2018; 2:22pm	11/9/2018; 3:22pm	Dry Cycle #6:		

A	B	C	D	E	F	G	H	I	J	K	L	M	O
Crucible ID	SampID	Client ID	SampType	Crucible Tare Weight (g)	Sample Volume (mL)	Dry Crucible &Sample 1st Weighing (g)	Dry Crucible&Sample 2nd Weighing (g)	Dry Crucible & Sample 3rd Weighing (g)	Dry Residue Weight OK >0.010 & <0.200 g	Value mg/L TDS	Unadj. mg/L TDS	Dil Factor	Comments
	1811003-03RE1	803	Sample	55.9731	40.0	56.0648	56.0644		0.0913	2282.5	2282.5	1	

NOTE: (1) Environmental Express ProWeight Filters -- F93447NM-X, Lot #: 800018-8134-R1; LIMS ID: 16E1722.

Reviewed by: Colin Breslin 8/9/2014 Approved by: Angela Odurasa 8/8/2014

FAN 11/13/2018

Total Dissolved Solids (TDS) by SM2540C/EPA 160.1

Analyst: Francis Awanya Preparation Date: 11/6/2018 Batch ID: B18K024

Analyte: Total Dissolved Solids Units: mg/L

Calculation: TDS (mg/L) = (Weight of Dry Sample (g) *1000000)/Volume of Sample (mL) Note: Weight of Dry Sample is the last dry weight recorded.

		180°C Oven #12:	180°C Oven	Date/Time IN	Date/ Time OUT	180°C Oven	Date/Time IN	Date/ Time OUT
Oven Number:	Oven #12	Overnight from	Dry Cycle #1:			Dry Cycle #4:		
		11/6/2018	Dry Cycle #2:			Dry Cycle #5:		
Balance Number:	Balance #17	to 11/8/2018	Dry Cycle #3:			Dry Cycle #6:		

A	B	C	D	E	F	G	H	I	J	K	L	M	O
Crucible ID	Sample ID	Client ID	Sample Type	Crucible Tare Weight (g)	Sample Volume (mL)	Dry Crucible & Sample 1st Weighing (g)	Dry Crucible & Sample 2nd Weighing (g)	Dry Crucible & Sample 3rd Weighing (g)	Dry Residue Weight OK > 0.010 & < 0.200 (g)	Value (mg/L TDS)	Unadjusted (mg/L TDS)	Dilution Factor	Comments
A1	1811002-01	[illegible]	Sample	58.1106	15.0							1	
A2	1811002-02	[illegible]	Sample	59.9070	5.0							1	
A3	1811002-03	[illegible]	Sample	55.9731	40.0							1	
A4	1811002-04	[illegible]	Sample	61.1470	25.0							1	
A5	1811002-05	[illegible]	Sample	57.7688	20.0							1	
A6	1811002-06	[illegible]	Sample	56.4344	20.0							1	
A7	1811002-07	[illegible]	Sample	54.4285	50.0							1	
Blank	B18K024-BLK1	-	Blank	56.6714	50.0							1	
A21	B18K024-DUP1	1811002-01	Duplicate	62.9198	15.0							1	
Ref	B18K024-SRM1	-	Reference	51.0685	50.0							1	LIMS ID #17H0907

NOTE: (1) Environmental Express ProWeight Filters -- FS3447MM-X, Lot #: 600018-8134-R1; LIMS ID: 18E1722.

Reviewed by: Colin Breslin 6/9/2014 Approved by: Angela Ocirasse 6/9/2014

FAA 11/8/2018

Balance Check

BALANCE ID: #17
DATE: 11/8/2017
ANALYST: Francis Awanya
WEIGHT SET ID: TROEMNER S/N: 4000017548
INITIAL & DATE: FAA 11/8/2018

Standard Weight (g)	Actual Weight (g)	Deviation (g) [Standard Weight - Actual
0.1000	0.1000	0.0000
0.2000	0.2000	0.0000
0.5000	0.5000	0.0000
1.0000	1.0000	0.0000
2.0000	2.0000	0.0000
5.0000	5.0000	0.0000
10.0000	10.0000	0.0000
20.0000	19.9999	0.0001
50.0000	50.0000	0.0000
100.0000	100.0000	0.0000

Balance Tolerance

*For weights 50 g - 100 g, deviation should be ± 0.0006 g
*For weights 20 g and under, deviation should be ± 0.0001 g

Balance Check

BALANCE ID: #17
DATE: 11/9/2018
ANALYST: Colin Breslin
WEIGHT SET ID: TROEMNER S/N: 4000017548
INITIAL & DATE: CTB 11/9/18

Standard Weight (g)	Actual Weight (g)	Deviation (g) [Standard Weight - Actual
0.1000	0.1000	0.0000
0.5000	0.5001	-0.0001
1.0000	0.9999	0.0001
5.0000	5.0000	0.0000
10.0000	10.0000	0.0000
50.0000	50.0001	-0.0001
100.0000	100.0000	0.0000

Balance Tolerance

*For weights 50 g - 100 g, deviation should be ± 0.0006 g
*For weights 20 g and under, deviation should be ± 0.0001 g

LABORATORY NOTEBOOK

Thermo Scientific Oven

Heratherm OMS100

S. #: 47804622

OVEN #12

ROOM: 1033

Received Date: unknown

In-service Date: 8/28/2015

OVEN #12
TEMPERATURE (°C)

PROJECT _____ Notebook No. _____ 9

Continued from Page _____

DATE	TIME	Oven Setting	Oven Reading	Elpro Reading	Analyst Initials	Comments
10/1/2018	8:56 pm (in)	105°	105°	105.2°	FW	#1809015 TDS
10/2/2018	5:09 pm (out)	101°	105°	105.2°	FW	B18J004 overnight
	5:27 pm (in)	180°	180°	180.2°	FW	#1809015 TDS
	5:42 pm	180°	180°	180.2°	FW	B18J004, 180C, 1hr
	6:32 pm (out)	180°	180°	180.1°	FW	
10/4/2018	5:45 pm (in)	180°	180°	179.5°	FW	#1809015 TDS
	6:16 pm	180°	180°	180.4°	FW	B18J004, 180C, 1hr
	6:37 pm	180°	180°	180.4°	FW	
	6:56 pm (out)	180°	180°	180.4°	FW	
10/10/2018	6:22 pm (in)	180°	180°	180.1°	FW	#1809015, TDS
	7:02 pm (out)	180°	180°	180.3°	FW	B18J004, 180C, 1hr.
10/26/2018	3:28 pm (in)	180°	180°	180.1°	FW	#1810011, TDS
	4:28 pm (out)	180°	180°	180.1°	FW	B18J035 drying crucibles 180°
~~10/29/2018~~ FMA						
~~10/29/2018~~		105°C	FMA	10/29/2018		
10/29/2018	11:54 AM (IN)	104°C	104°C	104.2°C	FMA	#B18J035 TDS
10/30/2018	7:25 AM (out)	104°C	104°C	104.6°C	FMA	#B18J035 overnight
10/30/2018	7:51 AM (IN)	180°C	180°C	180.5°C	FMA	Batch# B18J035
10/30/2018	8:51 AM (OUT)	180°C	180°C	180.6°C	FMA	
10/30/2018	11:20 AM (IN)	180°C	180°C	180.9°C	FMA	Batch B18J035
10/30/2018	12:20 PM (out)	180°C	180°C	180.2°C	FMA	
11/7/2018	6:25 pm (in)	180°C	180°C	180.4°C	FW	Drying Crucibles
11/8/2018	7:00 AM (out)	180°C	180°C	180.3°C	FW	
~~11/8/2018~~			180°C	180°C	~~FMA~~ FMA	
11/8/2018	2:00 PM (IN)	104°C	104°C	104.3°C	FMA	Batch# B18K024
11/9/2018	7:05 AM (out)	104°C	104°C	104.4°C	FMA	Batch# B18K024

Continued on Page

Read and Understood By

Signed _____ Date _____ Signed _____ Date _____

OVEN #12
(TEMPERATURE °C)

10
PROJECT _____

Notebook No. _____
Continued from Page _____

DATE	TIME	OVEN SETTING	OVEN READING	ELPRO READING	ANALYST INITIALS	COMMENTS
11/9/2018	7:20 AM (IN)	180°C	180°C	180.3°C	FAA	TDS
11/9/2018	8:20 AM (OUT)	180°C	180°C	180.1°C	FAA	Batch# BISKO23
11/9/2018	11:00 AM (IN)	180°C	180°C	181.5°C	FAA	TDS
11/9/2018	12:00 PM (OUT)	180°C	180°C	180.3°C	FAA	Batch# BISKO24
11/9/2018	2:22 PM (IN)	180°C	180°C	180.3°C	FAA	TDS
11/9/2018	3:22 PM (OUT)	180°C	180°C	180.0°C	FAA	Batch# BISKO24
11/13/2018	9:53 AM (IN)	180°C	180°C	180.3°C	FAA	TDS BISKO29
11/13/2018	10:53 AM (OUT)	180°C	180°C	180.0°C	FAA	
11/13/2018	1:15 PM (IN)	180°C	180°C	181.5°C	FAA	BISKO29 TDS
11/13/2018	2:15 PM (OUT)	180°C	180°C	180.0°C	FAA	

Continued on Page

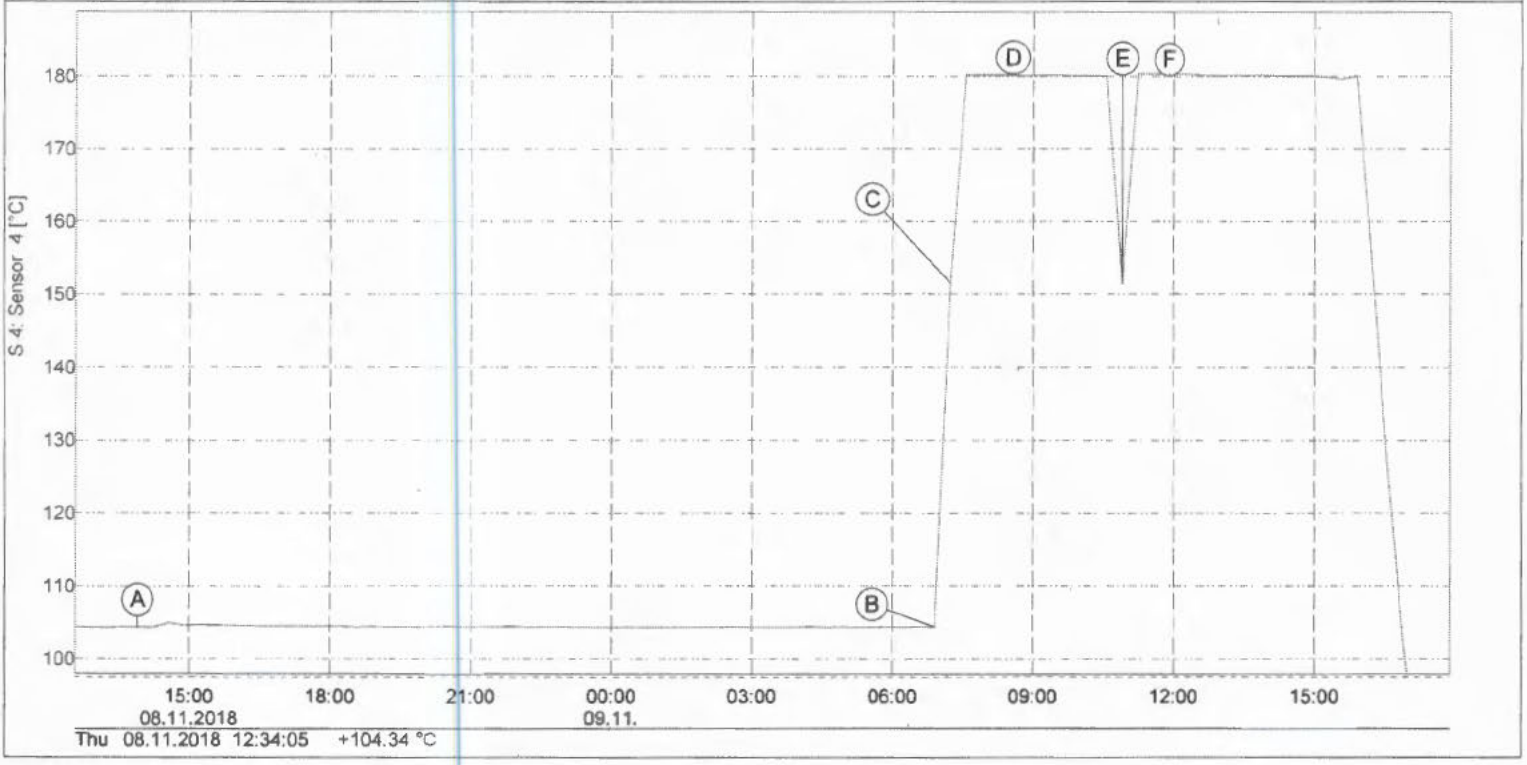
Read and Understood By

Signed _____ Date _____ Signed _____ Date _____

ECOLOG-NET LA8 ID:303801 - elproLOG ANALYZE QLS 3.61.02
Date of Reading: 14.11.2018 16:15:49
Log Interval: 20 min
Module Tag: S1=Oven 10, S2=Oven 9, S3=Oven 11, S4=Oven 12, S5 - S8=Open
Data Description:
C:\Users\fawanya\Documents\303801_S1=Oven 10, S2=Oven -20181114-01.MDF

Work Order Number 1811002 (Batch# B18K024)
Analysis: Solids, TDS
1033 - Oven 12, Sensor S4
Analyst: FAA

	A to B	C to D	E to F
Start Date and time:	A) S4: 08.11.2018 13:54:05	C) S4: 09.11.2018 07:14:05	E) S4: 09.11.2018 10:54:05
End Date and Time:	B) S4: 09.11.2018 06:54:05	D) S4: 09.11.2018 08:34:05	F) S4: 09.11.2018 11:54:05



FAWANYA, 14.11.2018 / Current Line Chart

ECOLOG-NET LA8 ID:303801 - elproLOG ANALYZE QLS 3.61.02
Date of Reading: 14.11.2018 16:15:49
Log Interval: 20 min
Module Tag: S1=Oven 10, S2=Oven 9, S3=Oven 11, S4=Oven 12, S5 - S8=Open
Data Description:
C:\Users\fawanya\Documents\303801_S1=Oven 10, S2=Oven -20181114-01.MDF

Work Order Number 1811002 (Batch# B18K024)
Analysis: Solids, TDS
1033 - Oven 12, Sensor S4
Analyst: FAA

	A to B	C to D	E to F
Start Date and time:	A) S4: 08.11.2018 13:54:05	C) S4: 09.11.2018 07:14:05	E) S4: 09.11.2018 10:54:05
End Date and Time:	B) S4: 09.11.2018 06:54:05	D) S4: 09.11.2018 08:34:05	F) S4: 09.11.2018 11:54:05

	Date	Time	Sensor 1	Sensor 2	Sensor 3	Sensor 4	Info
560	08.11.2018	13:34:05	+104.71 °C	+21.38 °C	+21.3 °C	+104.34 °C	
561	08.11.2018	13:54:05	+104.71 °C	+21.45 °C	+21.3 °C	+104.34 °C	
562	08.11.2018	14:14:05	+104.74 °C	+21.48 °C	+21.5 °C	+104.30 °C	
563	08.11.2018	14:34:05	+104.71 °C	+21.48 °C	+21.5 °C	+104.91 °C	
564	08.11.2018	14:54:05	+104.71 °C	+21.52 °C	+21.5 °C	+104.57 °C	
565	08.11.2018	15:14:05	+104.74 °C	+21.55 °C	+21.6 °C	+104.64 °C	
566	08.11.2018	15:34:05	+104.44 °C	+21.58 °C	+21.6 °C	+104.61 °C	
567	08.11.2018	15:54:05	+104.40 °C	+21.62 °C	+21.6 °C	+104.57 °C	
568	08.11.2018	16:14:05	+104.40 °C	+21.62 °C	+21.8 °C	+104.54 °C	
569	08.11.2018	16:34:05	+104.74 °C	+21.65 °C	+21.8 °C	+104.47 °C	
570	08.11.2018	16:54:05	+104.74 °C	+21.69 °C	+21.8 °C	+104.47 °C	
571	08.11.2018	17:14:05	+104.74 °C	+21.75 °C	+22.0 °C	+104.47 °C	
572	08.11.2018	17:34:05	+104.74 °C	+21.82 °C	+22.0 °C	+104.47 °C	
573	08.11.2018	17:54:05	+104.71 °C	+21.85 °C	+22.1 °C	+104.47 °C	
574	08.11.2018	18:14:05	+104.74 °C	+21.89 °C	+22.0 °C	+104.47 °C	
575	08.11.2018	18:34:05	+104.71 °C	+21.92 °C	+22.0 °C	+104.37 °C	
576	08.11.2018	18:54:05	+104.71 °C	+21.92 °C	+22.1 °C	+104.44 °C	
577	08.11.2018	19:14:05	+104.71 °C	+21.95 °C	+22.3 °C	+104.37 °C	
578	08.11.2018	19:34:05	+104.71 °C	+21.95 °C	+22.3 °C	+104.37 °C	
579	08.11.2018	19:54:05	+104.67 °C	+21.99 °C	+22.3 °C	+104.34 °C	
580	08.11.2018	20:14:05	+104.71 °C	+22.02 °C	+22.3 °C	+104.40 °C	
581	08.11.2018	20:34:05	+104.74 °C	+22.02 °C	+22.3 °C	+104.44 °C	
582	08.11.2018	20:54:05	+104.71 °C	+21.99 °C	+22.3 °C	+104.37 °C	
583	08.11.2018	21:14:05	+104.71 °C	+21.95 °C	+22.1 °C	+104.40 °C	
584	08.11.2018	21:34:05	+104.71 °C	+21.89 °C	+22.1 °C	+104.40 °C	

ECOLOG-NET LA8 ID:303801 - elproLOG ANALYZE QLS 3.61.02
Date of Reading: 14.11.2018 16:15:49
Log Interval: 20 min
Module Tag: S1=Oven 10, S2=Oven 9, S3=Oven 11, S4=Oven 12, S5 - S8=Open
Data Description:
C:\Users\fawanya\Documents\303801_S1=Oven 10, S2=Oven -20181114-01.MDF

ELPRO

Work Order Number 1811002 (Batch# B18K024)
Analysis: Solids, TDS
1033 - Oven 12, Sensor S4
Analyst: FAA

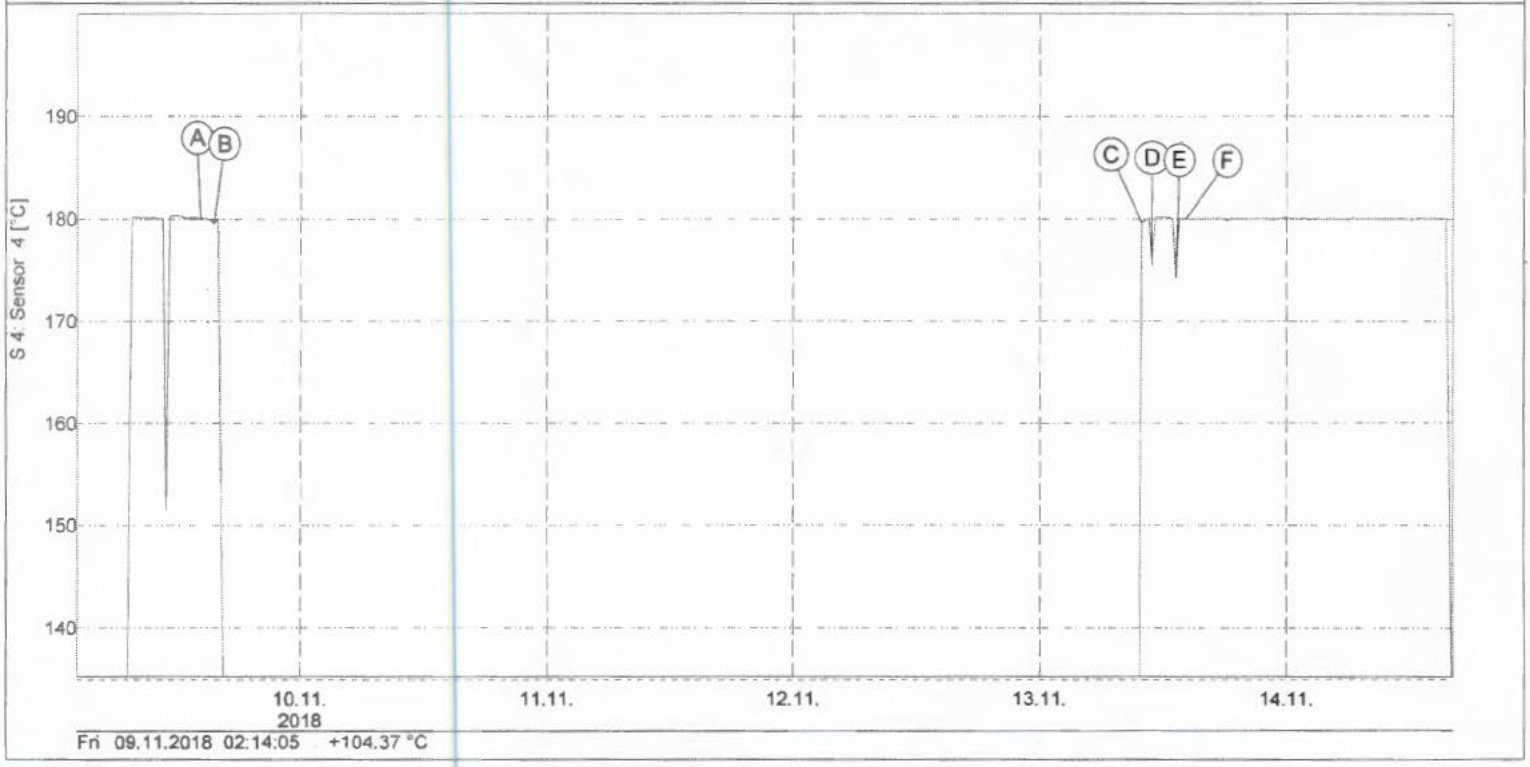
	A to B	C to D	E to F
Start Date and time:	A) S4: 08.11.2018 13:54:05	C) S4: 09.11.2018 07:14:05	E) S4: 09.11.2018 10:54:05
End Date and Time:	B) S4: 09.11.2018 06:54:05	D) S4: 09.11.2018 08:34:05	F) S4: 09.11.2018 11:54:05

	Date	Time	Sensor 1	Sensor 2	Sensor 3	Sensor 4	Info
585	08.11.2018	21:54:05	+104.67 °C	+21.82 °C	+22.1 °C	+104.44 °C	
586	08.11.2018	22:14:05	+104.67 °C	+21.79 °C	+22.1 °C	+104.37 °C	
587	08.11.2018	22:34:05	+104.67 °C	+21.72 °C	+22.1 °C	+104.40 °C	
588	08.11.2018	22:54:05	+104.71 °C	+21.69 °C	+22.1 °C	+104.40 °C	
589	08.11.2018	23:14:05	+104.71 °C	+21.62 °C	+22.1 °C	+104.37 °C	
590	08.11.2018	23:34:05	+104.67 °C	+21.58 °C	+22.0 °C	+104.34 °C	
591	08.11.2018	23:54:05	+104.67 °C	+21.52 °C	+22.0 °C	+104.34 °C	
592	09.11.2018	00:14:05	+104.67 °C	+21.48 °C	+22.0 °C	+104.34 °C	
593	09.11.2018	00:34:05	+104.67 °C	+21.45 °C	+22.0 °C	+104.37 °C	
594	09.11.2018	00:54:05	+104.71 °C	+21.42 °C	+22.0 °C	+104.37 °C	
595	09.11.2018	01:14:05	+104.71 °C	+21.38 °C	+22.0 °C	+104.37 °C	
596	09.11.2018	01:34:05	+104.67 °C	+21.38 °C	+22.0 °C	+104.37 °C	
597	09.11.2018	01:54:05	+104.71 °C	+21.35 °C	+22.0 °C	+104.34 °C	
598	09.11.2018	02:14:05	+104.67 °C	+21.31 °C	+21.8 °C	+104.37 °C	
599	09.11.2018	02:34:05	+104.67 °C	+21.31 °C	+21.8 °C	+104.40 °C	
600	09.11.2018	02:54:05	+104.67 °C	+21.28 °C	+22.0 °C	+104.37 °C	
601	09.11.2018	03:14:05	+104.71 °C	+21.28 °C	+22.0 °C	+104.34 °C	
602	09.11.2018	03:34:05	+104.67 °C	+21.31 °C	+22.0 °C	+104.37 °C	
603	09.11.2018	03:54:05	+104.67 °C	+21.31 °C	+22.0 °C	+104.37 °C	
604	09.11.2018	04:14:05	+104.67 °C	+21.31 °C	+22.0 °C	+104.44 °C	
605	09.11.2018	04:34:05	+104.64 °C	+21.31 °C	+22.0 °C	+104.34 °C	
606	09.11.2018	04:54:05	+104.71 °C	+21.31 °C	+22.0 °C	+104.40 °C	
607	09.11.2018	05:14:05	+104.71 °C	+21.35 °C	+22.0 °C	+104.37 °C	
608	09.11.2018	05:34:05	+104.71 °C	+21.35 °C	+22.0 °C	+104.37 °C	
609	09.11.2018	05:54:05	+104.71 °C	+21.35 °C	+22.0 °C	+104.40 °C	

ECOLOG-NET LA8 ID:303801 - elproLOG ANALYZE QLS 3.61.02
Date of Reading: 14.11.2018 16:15:49
Log Interval: 20 min
Module Tag: S1=Oven 10, S2=Oven 9, S3=Oven 11, S4=Oven 12, S5 - S8=Open
Data Description:
C:\Users\fawanya\Documents\303801_S1=Oven 10, S2=Oven -20181114-01.MDF

Work Order Number 1811002 (Batch# B18K024 and B18K029)
Analysis: Solids, TDS
1033 - Oven 12, Sensor S4
Analyst: FAA

	A to B	C to D	E to F
Start Date and time:	A) S4: 09.11.2018 14:14:05	C) S4: 13.11.2018 09:54:05	E) S4: 13.11.2018 13:14:05
End Date and Time:	B) S4: 09.11.2018 15:34:05	D) S4: 13.11.2018 10:54:05	F) S4: 13.11.2018 14:14:05



FAWANYA, 14.11.2018 / Current Line Chart

ECOLOG-NET LA8 ID:303801 - elproLOG ANALYZE QLS 3.61.02
Date of Reading: 14.11.2018 16:15:49
Log Interval: 20 min
Module Tag: S1=Oven 10, S2=Oven 9, S3=Oven 11, S4=Oven 12, S5 - S8=Open
Data Description:
C:\Users\fawanya\Documents\303801_S1=Oven 10, S2=Oven -20181114-01.MDF

Work Order Number 1811002 (Batch# B18K024 and B18K029)
Analysis: Solids, TDS
1033 - Oven 12, Sensor S4
Analyst: FAA

	A to B	C to D	E to F
Start Date and time:	A) S4: 09.11.2018 14:14:05	C) S4: 13.11.2018 09:54:05	E) S4: 13.11.2018 13:14:05
End Date and Time:	B) S4: 09.11.2018 15:34:05	D) S4: 13.11.2018 10:54:05	F) S4: 13.11.2018 14:14:05

	Date	Time	Sensor 1	Sensor 2	Sensor 3	Sensor 4	Info
633	09.11.2018	13:54:05	+104.74 °C	+21.08 °C	+21.5 °C	+180.13 °C	
634	09.11.2018	14:14:05	+104.74 °C	+21.08 °C	+21.6 °C	+180.02 °C	
635	09.11.2018	14:34:05	+104.71 °C	+21.11 °C	+21.3 °C	+180.06 °C	
636	09.11.2018	14:54:05	+104.67 °C	+21.15 °C	+21.3 °C	+180.02 °C	
637	09.11.2018	15:14:05	+104.74 °C	+21.15 °C	+21.5 °C	+179.92 °C	
638	09.11.2018	15:34:05	+104.71 °C	+21.18 °C	+21.3 °C	+179.52 °C	
639	09.11.2018	15:54:05	+104.67 °C	+21.18 °C	+21.3 °C	+180.06 °C	
640	09.11.2018	16:14:05	+104.71 °C	+21.18 °C	+21.3 °C	+154.09 °C	
641	09.11.2018	16:34:05	+104.67 °C	+21.18 °C	+21.3 °C	+125.73 °C	
642	09.11.2018	16:54:05	+104.71 °C	+21.11 °C	+21.0 °C	+102.42 °C	
643	09.11.2018	17:14:05	+104.67 °C	+21.01 °C	+20.8 °C	+84.15 °C	
644	09.11.2018	17:34:05	+104.67 °C	+20.88 °C	+20.6 °C	+70.02 °C	
645	09.11.2018	17:54:05	+104.67 °C	+20.68 °C	+20.5 °C	+59.06 °C	
646	09.11.2018	18:14:05	+104.67 °C	+20.44 °C	+20.3 °C	+50.58 °C	
647	09.11.2018	18:34:05	+104.67 °C	+20.20 °C	+20.1 °C	+43.99 °C	
648	09.11.2018	18:54:05	+104.67 °C	+19.97 °C	+19.8 °C	+38.87 °C	
649	09.11.2018	19:14:05	+104.64 °C	+19.77 °C	+19.8 °C	+34.84 °C	
650	09.11.2018	19:34:05	+104.64 °C	+19.57 °C	+19.6 °C	+31.64 °C	
651	09.11.2018	19:54:05	+104.67 °C	+19.36 °C	+19.4 °C	+29.12 °C	
652	09.11.2018	20:14:05	+104.64 °C	+19.16 °C	+19.1 °C	+27.07 °C	
653	09.11.2018	20:34:05	+104.67 °C	+18.99 °C	+19.1 °C	+25.45 °C	
654	09.11.2018	20:54:05	+104.67 °C	+18.83 °C	+19.1 °C	+24.11 °C	
655	09.11.2018	21:14:05	+104.64 °C	+18.69 °C	+18.9 °C	+23.03 °C	
656	09.11.2018	21:34:05	+104.67 °C	+18.59 °C	+18.8 °C	+22.19 °C	
657	09.11.2018	21:54:05	+104.64 °C	+18.52 °C	+18.8 °C	+21.52 °C	

ECOLOG-NET LA8 ID:303801 - elproLOG ANALYZE QLS 3.61.02
Date of Reading: 14.11.2018 16:15:49
Log Interval: 20 min
Module Tag: S1=Oven 10, S2=Oven 9, S3=Oven 11, S4=Oven 12, S5 - S8=Open
Data Description:
C:\Users\fawanya\Documents\303801_S1=Oven 10, S2=Oven -20181114-01.MDF

ELPRO

Work Order Number 1811002 (Batch# B18K024 and B18K029)
Analysis: Solids, TDS
1033 - Oven 12, Sensor S4
Analyst: FAA

	A to B	C to D	E to F
Start Date and time:	A) S4: 09.11.2018 14:14:05	C) S4: 13.11.2018 09:54:05	E) S4: 13.11.2018 13:14:05
End Date and Time:	B) S4: 09.11.2018 15:34:05	D) S4: 13.11.2018 10:54:05	F) S4: 13.11.2018 14:14:05

	Date	Time	Sensor 1	Sensor 2	Sensor 3	Sensor 4	Info
658	09.11.2018	22:14:05	+104.64 °C	+18.46 °C	+18.8 °C	+20.94 °C	
659	09.11.2018	22:34:05	+104.67 °C	+18.42 °C	+18.8 °C	+20.54 °C	
660	09.11.2018	22:54:05	+104.64 °C	+18.42 °C	+18.6 °C	+20.20 °C	
661	09.11.2018	23:14:05	+104.67 °C	+18.42 °C	+18.6 °C	+19.94 °C	
662	09.11.2018	23:34:05	+104.67 °C	+18.42 °C	+18.8 °C	+19.73 °C	
663	09.11.2018	23:54:05	+104.67 °C	+18.46 °C	+18.8 °C	+19.53 °C	
664	10.11.2018	00:14:05	+104.64 °C	+18.49 °C	+18.8 °C	+19.43 °C	
665	10.11.2018	00:34:05	+104.67 °C	+18.52 °C	+18.6 °C	+19.33 °C	
666	10.11.2018	00:54:05	+104.67 °C	+18.56 °C	+18.6 °C	+19.23 °C	
667	10.11.2018	01:14:05	+104.67 °C	+18.59 °C	+18.6 °C	+19.20 °C	
668	10.11.2018	01:34:05	+104.64 °C	+18.59 °C	+18.6 °C	+19.13 °C	
669	10.11.2018	01:54:05	+104.64 °C	+18.62 °C	+18.6 °C	+19.09 °C	
670	10.11.2018	02:14:05	+104.67 °C	+18.62 °C	+18.8 °C	+19.03 °C	
671	10.11.2018	02:34:05	+104.71 °C	+18.62 °C	+18.6 °C	+18.99 °C	
672	10.11.2018	02:54:05	+104.64 °C	+18.62 °C	+18.6 °C	+18.96 °C	
673	10.11.2018	03:14:05	+104.64 °C	+18.62 °C	+18.4 °C	+18.93 °C	
674	10.11.2018	03:34:05	+104.64 °C	+18.62 °C	+18.6 °C	+18.89 °C	
675	10.11.2018	03:54:05	+104.64 °C	+18.59 °C	+18.4 °C	+18.86 °C	
676	10.11.2018	04:14:05	+104.64 °C	+18.59 °C	+18.4 °C	+18.83 °C	
677	10.11.2018	04:34:05	+104.67 °C	+18.59 °C	+18.4 °C	+18.79 °C	
678	10.11.2018	04:54:05	+104.67 °C	+18.59 °C	+18.6 °C	+18.79 °C	
679	10.11.2018	05:14:05	+104.67 °C	+18.59 °C	+18.4 °C	+18.76 °C	
680	10.11.2018	05:34:05	+104.71 °C	+18.59 °C	+18.4 °C	+18.76 °C	
681	10.11.2018	05:54:05	+104.67 °C	+18.59 °C	+18.4 °C	+18.76 °C	
682	10.11.2018	06:14:05	+104.64 °C	+18.62 °C	+18.6 °C	+18.76 °C	

ECOLOG-NET LA8 ID:303801 - elproLOG ANALYZE QLS 3.61.02
Date of Reading: 14.11.2018 16:15:49
Log Interval: 20 min
Module Tag: S1=Oven 10, S2=Oven 9, S3=Oven 11, S4=Oven 12, S5 - S8=Open
Data Description:
C:\Users\fawanya\Documents\303801_S1=Oven 10, S2=Oven -20181114-01.MDF

Work Order Number 1811002 (Batch# B18K024 and B18K029)
Analysis: Solids, TDS
1033 - Oven 12, Sensor S4
Analyst: FAA

	A to B	C to D	E to F
Start Date and time:	A) S4: 09.11.2018 14:14:05	C) S4: 13.11.2018 09:54:05	E) S4: 13.11.2018 13:14:05
End Date and Time:	B) S4: 09.11.2018 15:34:05	D) S4: 13.11.2018 10:54:05	F) S4: 13.11.2018 14:14:05

	Date	Time	Sensor 1	Sensor 2	Sensor 3	Sensor 4	Info
683	10.11.2018	06:34:05	+104.67 °C	+18.62 °C	+18.6 °C	+18.76 °C	
684	10.11.2018	06:54:05	+104.64 °C	+18.66 °C	+18.4 °C	+18.79 °C	
685	10.11.2018	07:14:05	+104.67 °C	+18.66 °C	+18.4 °C	+18.79 °C	
686	10.11.2018	07:34:05	+104.67 °C	+18.66 °C	+18.4 °C	+18.83 °C	
687	10.11.2018	07:54:05	+104.67 °C	+18.69 °C	+18.4 °C	+18.83 °C	
688	10.11.2018	08:14:05	+104.67 °C	+18.69 °C	+18.4 °C	+18.86 °C	
689	10.11.2018	08:34:05	+104.67 °C	+18.69 °C	+18.4 °C	+18.89 °C	
690	10.11.2018	08:54:05	+104.67 °C	+18.72 °C	+18.6 °C	+18.93 °C	
691	10.11.2018	09:14:05	+104.67 °C	+18.72 °C	+18.6 °C	+18.96 °C	
692	10.11.2018	09:34:05	+104.67 °C	+18.72 °C	+18.6 °C	+18.96 °C	
693	10.11.2018	09:54:05	+104.67 °C	+18.72 °C	+18.4 °C	+18.99 °C	
694	10.11.2018	10:14:05	+104.67 °C	+18.69 °C	+18.4 °C	+18.99 °C	
695	10.11.2018	10:34:05	+104.67 °C	+18.69 °C	+18.3 °C	+18.99 °C	
696	10.11.2018	10:54:05	+104.67 °C	+18.66 °C	+18.3 °C	+18.96 °C	
697	10.11.2018	11:14:05	+104.67 °C	+18.59 °C	+18.3 °C	+18.96 °C	
698	10.11.2018	11:34:05	+104.64 °C	+18.56 °C	+18.3 °C	+18.93 °C	
699	10.11.2018	11:54:05	+104.67 °C	+18.52 °C	+18.3 °C	+18.89 °C	
700	10.11.2018	12:14:05	+104.67 °C	+18.46 °C	+18.3 °C	+18.89 °C	
701	10.11.2018	12:34:05	+104.67 °C	+18.46 °C	+18.1 °C	+18.86 °C	
702	10.11.2018	12:54:05	+104.64 °C	+18.42 °C	+18.1 °C	+18.86 °C	
703	10.11.2018	13:14:05	+104.67 °C	+18.42 °C	+18.3 °C	+18.83 °C	
704	10.11.2018	13:34:05	+104.67 °C	+18.39 °C	+18.1 °C	+18.83 °C	
705	10.11.2018	13:54:05	+104.67 °C	+18.39 °C	+18.1 °C	+18.83 °C	
706	10.11.2018	14:14:05	+104.67 °C	+18.42 °C	+18.3 °C	+18.83 °C	
707	10.11.2018	14:34:05	+104.64 °C	+18.42 °C	+18.1 °C	+18.83 °C	

ECOLOG-NET LA8 ID:303801 - elproLOG ANALYZE QLS 3.61.02
Date of Reading: 14.11.2018 16:15:49
Log Interval: 20 min
Module Tag: S1=Oven 10, S2=Oven 9, S3=Oven 11, S4=Oven 12, S5 - S8=Open
Data Description:
C:\Users\fawanya\Documents\303801_S1=Oven 10, S2=Oven -20181114-01.MDF

Work Order Number 1811002 (Batch# B18K024 and B18K029)
Analysis: Solids, TDS
1033 - Oven 12, Sensor S4
Analyst: FAA

	A to B	C to D	E to F
Start Date and time:	A) S4: 09.11.2018 14:14:05	C) S4: 13.11.2018 09:54:05	E) S4: 13.11.2018 13:14:05
End Date and Time:	B) S4: 09.11.2018 15:34:05	D) S4: 13.11.2018 10:54:05	F) S4: 13.11.2018 14:14:05

	Date	Time	Sensor 1	Sensor 2	Sensor 3	Sensor 4	Info
708	10.11.2018	14:54:05	+104.67 °C	+18.42 °C	+18.1 °C	+18.83 °C	
709	10.11.2018	15:14:05	+104.64 °C	+18.46 °C	+18.1 °C	+18.79 °C	
710	10.11.2018	15:34:05	+104.64 °C	+18.46 °C	+18.1 °C	+18.79 °C	
711	10.11.2018	15:54:05	+104.67 °C	+18.46 °C	+18.1 °C	+18.79 °C	
712	10.11.2018	16:14:05	+104.64 °C	+18.46 °C	+18.1 °C	+18.76 °C	
713	10.11.2018	16:34:05	+104.67 °C	+18.46 °C	+18.1 °C	+18.76 °C	
714	10.11.2018	16:54:05	+104.64 °C	+18.46 °C	+18.1 °C	+18.72 °C	
715	10.11.2018	17:14:05	+104.67 °C	+18.46 °C	+18.1 °C	+18.72 °C	
716	10.11.2018	17:34:05	+104.64 °C	+18.42 °C	+18.1 °C	+18.69 °C	
717	10.11.2018	17:54:05	+104.67 °C	+18.42 °C	+18.1 °C	+18.66 °C	
718	10.11.2018	18:14:05	+104.61 °C	+18.39 °C	+18.1 °C	+18.62 °C	
719	10.11.2018	18:34:05	+104.64 °C	+18.39 °C	+17.9 °C	+18.59 °C	
720	10.11.2018	18:54:05	+104.64 °C	+18.35 °C	+18.1 °C	+18.56 °C	
721	10.11.2018	19:14:05	+104.67 °C	+18.32 °C	+17.9 °C	+18.52 °C	
722	10.11.2018	19:34:05	+104.67 °C	+18.25 °C	+18.1 °C	+18.52 °C	
723	10.11.2018	19:54:05	+104.64 °C	+18.25 °C	+18.1 °C	+18.46 °C	
724	10.11.2018	20:14:05	+104.67 °C	+18.22 °C	+17.9 °C	+18.42 °C	
725	10.11.2018	20:34:05	+104.64 °C	+18.19 °C	+17.8 °C	+18.39 °C	
726	10.11.2018	20:54:05	+104.64 °C	+18.15 °C	+17.9 °C	+18.35 °C	
727	10.11.2018	21:14:05	+104.64 °C	+18.09 °C	+17.9 °C	+18.32 °C	
728	10.11.2018	21:34:05	+104.64 °C	+18.05 °C	+17.8 °C	+18.29 °C	
729	10.11.2018	21:54:05	+104.64 °C	+18.02 °C	+17.9 °C	+18.25 °C	
730	10.11.2018	22:14:05	+104.64 °C	+18.02 °C	+17.8 °C	+18.22 °C	
731	10.11.2018	22:34:05	+104.64 °C	+17.98 °C	+17.9 °C	+18.19 °C	
732	10.11.2018	22:54:05	+104.64 °C	+17.95 °C	+17.8 °C	+18.19 °C	

ECOLOG-NET LA8 ID:303801 - elproLOG ANALYZE QLS 3.61.02
Date of Reading: 14.11.2018 16:15:49
Log Interval: 20 min
Module Tag: S1=Oven 10, S2=Oven 9, S3=Oven 11, S4=Oven 12, S5 - S8=Open
Data Description:
C:\Users\fawanya\Documents\303801_S1=Oven 10, S2=Oven -20181114-01.MDF

Work Order Number 1811002 (Batch# B18K024 and B18K029)
Analysis: Solids, TDS
1033 - Oven 12, Sensor S4
Analyst: FAA

	A to B	C to D	E to F
Start Date and time:	A) S4: 09.11.2018 14:14:05	C) S4: 13.11.2018 09:54:05	E) S4: 13.11.2018 13:14:05
End Date and Time:	B) S4: 09.11.2018 15:34:05	D) S4: 13.11.2018 10:54:05	F) S4: 13.11.2018 14:14:05

	Date	Time	Sensor 1	Sensor 2	Sensor 3	Sensor 4	Info
733	10.11.2018	23:14:05	+104.64 °C	+17.92 °C	+17.8 °C	+18.15 °C	
734	10.11.2018	23:34:05	+104.64 °C	+17.92 °C	+17.8 °C	+18.12 °C	
735	10.11.2018	23:54:05	+104.64 °C	+17.88 °C	+17.8 °C	+18.12 °C	
736	11.11.2018	00:14:05	+104.61 °C	+17.88 °C	+17.8 °C	+18.12 °C	
737	11.11.2018	00:34:05	+104.64 °C	+17.85 °C	+17.8 °C	+18.12 °C	
738	11.11.2018	00:54:05	+104.64 °C	+17.85 °C	+17.8 °C	+18.09 °C	
739	11.11.2018	01:14:05	+104.64 °C	+17.82 °C	+17.6 °C	+18.05 °C	
740	11.11.2018	01:34:05	+104.61 °C	+17.78 °C	+17.6 °C	+18.02 °C	
741	11.11.2018	01:54:05	+104.64 °C	+17.75 °C	+17.6 °C	+18.02 °C	
742	11.11.2018	02:14:05	+104.67 °C	+17.72 °C	+17.6 °C	+17.98 °C	
743	11.11.2018	02:34:05	+104.67 °C	+17.72 °C	+17.4 °C	+17.95 °C	
744	11.11.2018	02:54:05	+104.64 °C	+17.68 °C	+17.4 °C	+17.92 °C	
745	11.11.2018	03:14:05	+104.64 °C	+17.68 °C	+17.4 °C	+17.92 °C	
746	11.11.2018	03:34:05	+104.64 °C	+17.65 °C	+17.4 °C	+17.88 °C	
747	11.11.2018	03:54:05	+104.64 °C	+17.65 °C	+17.4 °C	+17.88 °C	
748	11.11.2018	04:14:05	+104.64 °C	+17.61 °C	+17.4 °C	+17.85 °C	
749	11.11.2018	04:34:05	+104.61 °C	+17.61 °C	+17.4 °C	+17.85 °C	
750	11.11.2018	04:54:05	+104.64 °C	+17.61 °C	+17.4 °C	+17.85 °C	
751	11.11.2018	05:14:05	+104.61 °C	+17.58 °C	+17.3 °C	+17.82 °C	
752	11.11.2018	05:34:05	+104.67 °C	+17.58 °C	+17.4 °C	+17.82 °C	
753	11.11.2018	05:54:05	+104.64 °C	+17.58 °C	+17.3 °C	+17.82 °C	
754	11.11.2018	06:14:05	+104.67 °C	+17.58 °C	+17.3 °C	+17.78 °C	
755	11.11.2018	06:34:05	+104.64 °C	+17.58 °C	+17.3 °C	+17.78 °C	
756	11.11.2018	06:54:05	+104.64 °C	+17.58 °C	+17.3 °C	+17.78 °C	
757	11.11.2018	07:14:05	+104.64 °C	+17.58 °C	+17.1 °C	+17.78 °C	

ECOLOG-NET LA8 ID:303801 - elproLOG ANALYZE QLS 3.61.02
Date of Reading: 14.11.2018 16:15:49
Log Interval: 20 min
Module Tag: S1=Oven 10, S2=Oven 9, S3=Oven 11, S4=Oven 12, S5 - S8=Open
Data Description:
C:\Users\fawanya\Documents\303801_S1=Oven 10, S2=Oven -20181114-01.MDF

Work Order Number 1811002 (Batch# B18K024 and B18K029)
Analysis: Solids, TDS
1033 - Oven 12, Sensor S4
Analyst: FAA

	A to B	C to D	E to F
Start Date and time:	A) S4: 09.11.2018 14:14:05	C) S4: 13.11.2018 09:54:05	E) S4: 13.11.2018 13:14:05
End Date and Time:	B) S4: 09.11.2018 15:34:05	D) S4: 13.11.2018 10:54:05	F) S4: 13.11.2018 14:14:05

	Date	Time	Sensor 1	Sensor 2	Sensor 3	Sensor 4	Info
758	11.11.2018	07:34:05	+104.61 °C	+17.55 °C	+17.1 °C	+17.78 °C	
759	11.11.2018	07:54:05	+104.64 °C	+17.55 °C	+17.1 °C	+17.78 °C	
760	11.11.2018	08:14:05	+104.64 °C	+17.55 °C	+17.1 °C	+17.75 °C	
761	11.11.2018	08:34:05	+104.61 °C	+17.55 °C	+17.3 °C	+17.78 °C	
762	11.11.2018	08:54:05	+104.64 °C	+17.55 °C	+17.3 °C	+17.78 °C	
763	11.11.2018	09:14:05	+104.64 °C	+17.55 °C	+17.3 °C	+17.85 °C	
764	11.11.2018	09:34:05	+104.64 °C	+17.58 °C	+17.3 °C	+17.88 °C	
765	11.11.2018	09:54:05	+104.67 °C	+17.65 °C	+17.4 °C	+17.95 °C	
766	11.11.2018	10:14:05	+104.67 °C	+17.72 °C	+17.6 °C	+18.02 °C	
767	11.11.2018	10:34:05	+104.67 °C	+17.98 °C	+17.8 °C	+18.19 °C	
768	11.11.2018	10:54:05	+104.64 °C	+18.12 °C	+17.8 °C	+18.39 °C	
769	11.11.2018	11:14:05	+104.64 °C	+18.25 °C	+17.8 °C	+18.52 °C	
770	11.11.2018	11:34:05	+104.67 °C	+18.35 °C	+17.9 °C	+18.66 °C	
771	11.11.2018	11:54:05	+104.67 °C	+18.46 °C	+17.9 °C	+18.79 °C	
772	11.11.2018	12:14:05	+104.64 °C	+18.59 °C	+18.1 °C	+18.96 °C	
773	11.11.2018	12:34:05	+104.67 °C	+18.66 °C	+18.1 °C	+19.03 °C	
774	11.11.2018	12:54:05	+104.64 °C	+18.72 °C	+18.1 °C	+19.09 °C	
775	11.11.2018	13:14:05	+104.67 °C	+18.79 °C	+18.3 °C	+19.13 °C	
776	11.11.2018	13:34:05	+104.64 °C	+18.86 °C	+18.3 °C	+19.20 °C	
777	11.11.2018	13:54:05	+104.64 °C	+18.93 °C	+18.4 °C	+19.23 °C	
778	11.11.2018	14:14:05	+104.67 °C	+18.96 °C	+18.3 °C	+19.26 °C	
779	11.11.2018	14:34:05	+104.64 °C	+18.99 °C	+18.4 °C	+19.33 °C	
780	11.11.2018	14:54:05	+104.64 °C	+19.03 °C	+18.4 °C	+19.36 °C	
781	11.11.2018	15:14:05	+104.64 °C	+19.06 °C	+18.6 °C	+19.36 °C	
782	11.11.2018	15:34:05	+104.71 °C	+19.09 °C	+18.6 °C	+19.43 °C	

ECOLOG-NET LA8 ID:303801 - elproLOG ANALYZE QLS 3.61.02
Date of Reading: 14.11.2018 16:15:49
Log Interval: 20 min
Module Tag: S1=Oven 10, S2=Oven 9, S3=Oven 11, S4=Oven 12, S5 - S8=Open
Data Description:
C:\Users\fawanya\Documents\303801_S1=Oven 10, S2=Oven -20181114-01.MDF

ELPRO

Work Order Number 1811002 (Batch# B18K024 and B18K029)
Analysis: Solids, TDS
1033 - Oven 12, Sensor S4
Analyst: FAA

	A to B	C to D	E to F
Start Date and time:	A) S4: 09.11.2018 14:14:05	C) S4: 13.11.2018 09:54:05	E) S4: 13.11.2018 13:14:05
End Date and Time:	B) S4: 09.11.2018 15:34:05	D) S4: 13.11.2018 10:54:05	F) S4: 13.11.2018 14:14:05

	Date	Time	Sensor 1	Sensor 2	Sensor 3	Sensor 4	Info
808	12.11.2018	00:14:05	+104.67 °C	+19.57 °C	+19.6 °C	+19.70 °C	
809	12.11.2018	00:34:05	+104.64 °C	+19.60 °C	+19.6 °C	+19.73 °C	
810	12.11.2018	00:54:05	+104.67 °C	+19.60 °C	+19.6 °C	+19.73 °C	
811	12.11.2018	01:14:05	+104.67 °C	+19.63 °C	+19.6 °C	+19.73 °C	
812	12.11.2018	01:34:05	+104.64 °C	+19.63 °C	+19.4 °C	+19.73 °C	
813	12.11.2018	01:54:05	+104.67 °C	+19.63 °C	+19.6 °C	+19.77 °C	
814	12.11.2018	02:14:05	+104.64 °C	+19.63 °C	+19.6 °C	+19.77 °C	
815	12.11.2018	02:34:05	+104.67 °C	+19.67 °C	+19.6 °C	+19.77 °C	
816	12.11.2018	02:54:05	+104.64 °C	+19.67 °C	+19.6 °C	+19.77 °C	
817	12.11.2018	03:14:05	+104.67 °C	+19.67 °C	+19.6 °C	+19.77 °C	
818	12.11.2018	03:34:05	+104.67 °C	+19.67 °C	+19.8 °C	+19.80 °C	
819	12.11.2018	03:54:05	+104.67 °C	+19.70 °C	+19.8 °C	+19.80 °C	
820	12.11.2018	04:14:05	+104.67 °C	+19.70 °C	+19.8 °C	+19.83 °C	
821	12.11.2018	04:34:05	+104.67 °C	+19.70 °C	+19.8 °C	+19.80 °C	
822	12.11.2018	04:54:05	+104.67 °C	+19.73 °C	+19.8 °C	+19.83 °C	
823	12.11.2018	05:14:05	+104.71 °C	+19.73 °C	+19.8 °C	+19.83 °C	
824	12.11.2018	05:34:05	+104.71 °C	+19.73 °C	+19.8 °C	+19.83 °C	
825	12.11.2018	05:54:05	+104.67 °C	+19.73 °C	+19.8 °C	+19.83 °C	
826	12.11.2018	06:14:05	+104.67 °C	+19.73 °C	+19.8 °C	+19.83 °C	
827	12.11.2018	06:34:05	+104.67 °C	+19.77 °C	+19.8 °C	+19.83 °C	
828	12.11.2018	06:54:05	+104.67 °C	+19.73 °C	+19.8 °C	+19.83 °C	
829	12.11.2018	07:14:05	+104.64 °C	+19.77 °C	+19.8 °C	+19.83 °C	
830	12.11.2018	07:34:05	+104.67 °C	+19.77 °C	+19.8 °C	+19.83 °C	
831	12.11.2018	07:54:05	+104.64 °C	+19.77 °C	+19.8 °C	+19.87 °C	
832	12.11.2018	08:14:05	+104.67 °C	+19.77 °C	+19.8 °C	+19.87 °C	

ECOLOG-NET LA8 ID:303801 - elproLOG ANALYZE QLS 3.61.02
Date of Reading: 14.11.2018 16:15:49
Log Interval: 20 min
Module Tag: S1=Oven 10, S2=Oven 9, S3=Oven 11, S4=Oven 12, S5 - S8=Open
Data Description:
C:\Users\fawanya\Documents\303801_S1=Oven 10, S2=Oven -20181114-01.MDF

Work Order Number 1811002 (Batch# B18K024 and B18K029)
Analysis: Solids, TDS
1033 - Oven 12, Sensor S4
Analyst: FAA

	A to B	C to D	E to F
Start Date and time:	A) S4: 09.11.2018 14:14:05	C) S4: 13.11.2018 09:54:05	E) S4: 13.11.2018 13:14:05
End Date and Time:	B) S4: 09.11.2018 15:34:05	D) S4: 13.11.2018 10:54:05	F) S4: 13.11.2018 14:14:05

	Date	Time	Sensor 1	Sensor 2	Sensor 3	Sensor 4	Info
833	12.11.2018	08:34:05	+104.67 °C	+19.77 °C	+19.8 °C	+19.90 °C	
834	12.11.2018	08:54:05	+104.67 °C	+19.80 °C	+19.8 °C	+19.90 °C	
835	12.11.2018	09:14:05	+104.64 °C	+19.80 °C	+19.8 °C	+19.94 °C	
836	12.11.2018	09:34:05	+104.67 °C	+19.80 °C	+19.8 °C	+19.94 °C	
837	12.11.2018	09:54:05	+104.67 °C	+19.80 °C	+19.8 °C	+19.97 °C	
838	12.11.2018	10:14:05	+104.67 °C	+19.83 °C	+19.8 °C	+19.97 °C	
839	12.11.2018	10:34:05	+104.67 °C	+19.83 °C	+19.8 °C	+20.00 °C	
840	12.11.2018	10:54:05	+104.67 °C	+19.83 °C	+19.8 °C	+20.00 °C	
841	12.11.2018	11:14:05	+104.67 °C	+19.83 °C	+19.8 °C	+20.04 °C	
842	12.11.2018	11:34:05	+104.67 °C	+19.83 °C	+19.8 °C	+20.07 °C	
843	12.11.2018	11:54:05	+104.67 °C	+19.87 °C	+19.8 °C	+20.07 °C	
844	12.11.2018	12:14:05	+104.67 °C	+19.87 °C	+20.0 °C	+20.10 °C	
845	12.11.2018	12:34:05	+104.67 °C	+19.90 °C	+19.8 °C	+20.10 °C	
846	12.11.2018	12:54:05	+104.64 °C	+19.90 °C	+19.8 °C	+20.10 °C	
847	12.11.2018	13:14:05	+104.64 °C	+19.90 °C	+20.0 °C	+20.14 °C	
848	12.11.2018	13:34:05	+104.64 °C	+19.90 °C	+19.8 °C	+20.14 °C	
849	12.11.2018	13:54:05	+104.67 °C	+19.90 °C	+19.8 °C	+20.14 °C	
850	12.11.2018	14:14:05	+104.64 °C	+19.90 °C	+19.8 °C	+20.10 °C	
851	12.11.2018	14:34:05	+104.64 °C	+19.90 °C	+19.8 °C	+20.10 °C	
852	12.11.2018	14:54:05	+104.64 °C	+19.90 °C	+19.8 °C	+20.10 °C	
853	12.11.2018	15:14:05	+104.67 °C	+19.90 °C	+19.8 °C	+20.07 °C	
854	12.11.2018	15:34:05	+104.67 °C	+19.90 °C	+19.8 °C	+20.07 °C	
855	12.11.2018	15:54:05	+104.67 °C	+19.90 °C	+19.8 °C	+20.07 °C	
856	12.11.2018	16:14:05	+104.64 °C	+19.90 °C	+20.0 °C	+20.07 °C	
857	12.11.2018	16:34:05	+104.67 °C	+19.90 °C	+20.0 °C	+20.04 °C	

ECOLOG-NET LA8 ID:303801 - elproLOG ANALYZE QLS 3.61.02
Date of Reading: 14.11.2018 16:15:49
Log Interval: 20 min
Module Tag: S1=Oven 10, S2=Oven 9, S3=Oven 11, S4=Oven 12, S5 - S8=Open
Data Description:
C:\Users\fawanya\Documents\303801_S1=Oven 10, S2=Oven -20181114-01.MDF

ELPRO

Work Order Number 1811002 (Batch# B18K024 and B18K029)
Analysis: Solids, TDS
1033 - Oven 12, Sensor S4
Analyst: FAA

A to B	C to D	E to F
Start Date and time: A) S4: 09.11.2018 14:14:05	C) S4: 13.11.2018 09:54:05	E) S4: 13.11.2018 13:14:05
End Date and Time: B) S4: 09.11.2018 15:34:05	D) S4: 13.11.2018 10:54:05	F) S4: 13.11.2018 14:14:05

	Date	Time	Sensor 1	Sensor 2	Sensor 3	Sensor 4	Info
858	12.11.2018	16:54:05	+104.71 °C	+19.87 °C	+19.8 °C	+20.04 °C	
859	12.11.2018	17:14:05	+104.64 °C	+19.87 °C	+20.0 °C	+20.04 °C	
860	12.11.2018	17:34:05	+104.67 °C	+19.87 °C	+19.8 °C	+20.00 °C	
861	12.11.2018	17:54:05	+104.64 °C	+19.87 °C	+20.0 °C	+20.00 °C	
862	12.11.2018	18:14:05	+104.67 °C	+19.87 °C	+19.6 °C	+20.00 °C	
863	12.11.2018	18:34:05	+104.64 °C	+19.80 °C	+19.6 °C	+19.94 °C	
864	12.11.2018	18:54:05	+104.67 °C	+19.70 °C	+19.4 °C	+19.83 °C	
865	12.11.2018	19:14:05	+104.64 °C	+19.60 °C	+19.3 °C	+19.70 °C	
866	12.11.2018	19:34:05	+104.64 °C	+19.43 °C	+19.1 °C	+19.57 °C	
867	12.11.2018	19:54:05	+104.61 °C	+19.30 °C	+18.9 °C	+19.40 °C	
868	12.11.2018	20:14:05	+104.64 °C	+19.13 °C	+18.9 °C	+19.26 °C	
869	12.11.2018	20:34:05	+104.64 °C	+18.96 °C	+18.8 °C	+19.13 °C	
870	12.11.2018	20:54:05	+104.71 °C	+18.83 °C	+18.6 °C	+18.99 °C	
871	12.11.2018	21:14:05	+104.64 °C	+18.69 °C	+18.6 °C	+18.86 °C	
872	12.11.2018	21:34:05	+104.67 °C	+18.56 °C	+18.4 °C	+18.72 °C	
873	12.11.2018	21:54:05	+104.64 °C	+18.42 °C	+18.4 °C	+18.62 °C	
874	12.11.2018	22:14:05	+104.64 °C	+18.32 °C	+18.3 °C	+18.52 °C	
875	12.11.2018	22:34:05	+104.64 °C	+18.19 °C	+18.1 °C	+18.42 °C	
876	12.11.2018	22:54:05	+104.67 °C	+18.12 °C	+18.1 °C	+18.35 °C	
877	12.11.2018	23:14:05	+104.64 °C	+18.02 °C	+18.1 °C	+18.25 °C	
878	12.11.2018	23:34:05	+104.61 °C	+17.95 °C	+17.9 °C	+18.19 °C	
879	12.11.2018	23:54:05	+104.64 °C	+17.88 °C	+17.9 °C	+18.12 °C	
880	13.11.2018	00:14:05	+104.64 °C	+17.85 °C	+17.9 °C	+18.12 °C	
881	13.11.2018	00:34:05	+104.61 °C	+17.82 °C	+17.8 °C	+18.09 °C	
882	13.11.2018	00:54:05	+104.61 °C	+17.82 °C	+17.8 °C	+18.09 °C	

ECOLOG-NET LA8 ID:303801 - elproLOG ANALYZE QLS 3.61.02
Date of Reading: 14.11.2018 16:15:49
Log Interval: 20 min
Module Tag: S1=Oven 10, S2=Oven 9, S3=Oven 11, S4=Oven 12, S5 - S8=Open
Data Description:
C:\Users\fawanya\Documents\303801_S1=Oven 10, S2=Oven -20181114-01.MDF

Work Order Number 1811002 (Batch# B18K024 and B18K029)
Analysis: Solids, TDS
1033 - Oven 12, Sensor S4
Analyst: FAA

	A to B	C to D	E to F
Start Date and time:	A) S4: 09.11.2018 14:14:05	C) S4: 13.11.2018 09:54:05	E) S4: 13.11.2018 13:14:05
End Date and Time:	B) S4: 09.11.2018 15:34:05	D) S4: 13.11.2018 10:54:05	F) S4: 13.11.2018 14:14:05

	Date	Time	Sensor 1	Sensor 2	Sensor 3	Sensor 4	Info
883	13.11.2018	01:14:05	+104.61 °C	+17.82 °C	+17.8 °C	+18.05 °C	
884	13.11.2018	01:34:05	+104.64 °C	+17.85 °C	+17.8 °C	+18.09 °C	
885	13.11.2018	01:54:05	+104.64 °C	+17.88 °C	+17.8 °C	+18.12 °C	
886	13.11.2018	02:14:05	+104.64 °C	+17.92 °C	+17.8 °C	+18.12 °C	
887	13.11.2018	02:34:05	+104.64 °C	+17.95 °C	+17.8 °C	+18.15 °C	
888	13.11.2018	02:54:05	+104.64 °C	+17.98 °C	+17.8 °C	+18.19 °C	
889	13.11.2018	03:14:05	+104.61 °C	+18.02 °C	+17.8 °C	+18.19 °C	
890	13.11.2018	03:34:05	+104.64 °C	+18.05 °C	+17.8 °C	+18.22 °C	
891	13.11.2018	03:54:05	+104.64 °C	+18.09 °C	+17.8 °C	+18.25 °C	
892	13.11.2018	04:14:05	+104.64 °C	+18.12 °C	+17.8 °C	+18.25 °C	
893	13.11.2018	04:34:05	+104.64 °C	+18.19 °C	+17.8 °C	+18.29 °C	
894	13.11.2018	04:54:05	+104.64 °C	+18.22 °C	+17.9 °C	+18.32 °C	
895	13.11.2018	05:14:05	+104.61 °C	+18.25 °C	+17.8 °C	+18.35 °C	
896	13.11.2018	05:34:05	+104.64 °C	+18.29 °C	+17.8 °C	+18.35 °C	
897	13.11.2018	05:54:05	+104.64 °C	+18.32 °C	+17.9 °C	+18.39 °C	
898	13.11.2018	06:14:05	+104.64 °C	+18.35 °C	+17.9 °C	+18.42 °C	
899	13.11.2018	06:34:05	+104.64 °C	+18.39 °C	+17.9 °C	+18.42 °C	
900	13.11.2018	06:54:05	+104.64 °C	+18.42 °C	+17.9 °C	+18.46 °C	
901	13.11.2018	07:14:05	+104.67 °C	+18.42 °C	+17.9 °C	+18.49 °C	
902	13.11.2018	07:34:05	+104.64 °C	+18.46 °C	+17.9 °C	+18.49 °C	
903	13.11.2018	07:54:05	+104.64 °C	+18.46 °C	+17.9 °C	+18.52 °C	
904	13.11.2018	08:14:05	+104.67 °C	+18.49 °C	+17.9 °C	+18.56 °C	
905	13.11.2018	08:34:05	+104.64 °C	+18.52 °C	+17.9 °C	+18.59 °C	
906	13.11.2018	08:54:05	+104.64 °C	+18.52 °C	+18.1 °C	+18.62 °C	
907	13.11.2018	09:14:05	+104.67 °C	+18.52 °C	+17.9 °C	+18.66 °C	

ECOLOG-NET LA8 ID:303801 - elprcLOG ANALYZE QLS 3.61.02
Date of Reading: 14.11.2018 16:15:49
Log Interval: 20 min
Module Tag: S1=Oven 10, S2=Oven 9, S3=Oven 11, S4=Oven 12, S5 - S8=Open
Data Description:
C:\Users\fawanya\Documents\303801_S1=Oven 10, S2=Oven -20181114-01.MDF

Work Order Number 1811002 (Batch# B18K024 and B18K029)
Analysis: Solids, TDS
1033 - Oven 12, Sensor S4
Analyst: FAA

	A to B	C to D	E to F
Start Date and time:	A) S4: 09.11.2018 14:14:05	C) S4: 13.11.2018 09:54:05	E) S4: 13.11.2018 13:14:05
End Date and Time:	B) S4: 09.11.2018 15:34:05	D) S4: 13.11.2018 10:54:05	F) S4: 13.11.2018 14:14:05

	Date	Time	Sensor 1	Sensor 2	Sensor 3	Sensor 4	Info
908	13.11.2018	09:34:05	+104.61 °C	+18.52 °C	+17.9 °C	+106.35 °C	
909	13.11.2018	09:54:05	+104.64 °C	+18.52 °C	+17.9 °C	+179.62 °C	
910	13.11.2018	10:14:05	+104.64 °C	+18.52 °C	+17.9 °C	+179.89 °C	
911	13.11.2018	10:34:05	+104.64 °C	+18.52 °C	+17.9 °C	+180.02 °C	
912	13.11.2018	10:54:05	+104.67 °C	+18.56 °C	+17.9 °C	+175.52 °C	
913	13.11.2018	11:14:05	+104.64 °C	+18.52 °C	+17.9 °C	+180.16 °C	
914	13.11.2018	11:34:05	+104.64 °C	+18.52 °C	+17.9 °C	+180.16 °C	
915	13.11.2018	11:54:05	+104.64 °C	+18.49 °C	+17.8 °C	+180.19 °C	
916	13.11.2018	12:14:05	+104.64 °C	+18.49 °C	+17.8 °C	+180.13 °C	
917	13.11.2018	12:34:05	+104.64 °C	+18.46 °C	+17.8 °C	+180.09 °C	
918	13.11.2018	12:54:05	+104.64 °C	+18.42 °C	+17.8 °C	+180.13 °C	
919	13.11.2018	13:14:05	+104.64 °C	+18.39 °C	+17.8 °C	+174.31 °C	
920	13.11.2018	13:34:05	+104.67 °C	+18.35 °C	+17.8 °C	+180.06 °C	
921	13.11.2018	13:54:05	+104.67 °C	+18.35 °C	+17.8 °C	+179.99 °C	
922	13.11.2018	14:14:05	+104.64 °C	+18.35 °C	+17.8 °C	+180.02 °C	
923	13.11.2018	14:34:05	+104.64 °C	+18.32 °C	+17.8 °C	+179.99 °C	